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THE TORPEDO

IN PEACE AND WAR

Frontispiece

THE MOMENT OF DOOM—WEI-HAI-WEI

THE TORPEDO

IN PEACE AND WAR

BY

FRED. T. JANE

AUTHOR OF "BLAKE OF THE 'RATTLESNAKE'" "ALL THE WORLD'S FIGHTING SHIPS"
INVENTOR OF THE JANE NAVAL WAR GAME (*NAVAL KRIEGSPIEL*)

WITH NUMEROUS ILLUSTRATIONS BY THE AUTHOR

SECOND EDITION

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TO

ADMIRAL OF THE FLEET

THE HON. SIR HARRY KEPPEL, G.C.B.

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PREFACE TO SECOND EDITION.

THIS book first appeared some six years ago, since when certain advances have been made. These, however, have been mostly of a minor nature and always technical: the social side has not altered at all, and it is with the social side of torpedo-craft life that this book is intended to deal. Consequently, in preparing this particular edition for the press, I have not considered it necessary to effect changes in the text.

It may, however, be desirable briefly to note here the progress of the last few years.

Above-water tubes are no longer "dangerous." A safety pistol has been invented, and the explosion of a torpedo in its tube is no more likely to occur than the explosion of a shell in a gun. This invention followed immediately on the suppression of above-water tubes in the principal navies.

The gyroscope, otherwise known as the Abry apparatus, has appeared. By means of it the effective range of torpedoes has been increased greatly: two thousand yards is now a "moderate range," and three thousand quite possible. Four thousand is spoken of for the immediate future. On the other hand it must be remembered that while a torpedo will travel a thousand yards in one minute, it will take at least three minutes to do two thousand, and six or seven to do three thousand. Anything outside a thousand yards is therefore still in the region of guess work.

The "gyro" is an adaptation of the well known fact that a heavy wheel spun in any direction or plane tends to remain in that plane. Therefore a torpedo so fitted will run straight, despite currents, etc.—at any rate in theory. In practice, unless the greatest care is observed with the gyro and its upkeep, the torpedo may come back to its starting point, so that it is still to a great extent an erratic weapon in comparison with the gun.

The Submarine has made considerable strides in naval estimation, and nearly every fleet now have, or is about to have, a submarine flotilla. No submarine, however, is as yet out of the experimental stage, save so far as the merely mechanical features are concerned. How to find and see the enemy is still a grave problem.

Means to destroy submarines have been diligently sought, but so far without much real success.

The chief point of interest in connection with these craft is that it has lately become apparent that the notion that "the submarine is the weapon of the weaker power" is entirely inaccurate. It is essentially most useful to the stronger fleet, and the presence of submarines with a blockading fleet will greatly impede the escape of the blockaded. It may be mentioned that the newly invented "blockade mines" which can be dropped off any harbour will also greatly assist this.

FRED. T. JANE.

PORTSMOUTH, *January* 1904.

PREFACE TO FIRST EDITION.

I HAVE tried in these pages to set out what may be called the social side of torpedo-craft life, the life as I have seen, experienced, and enjoyed it. All the illustrations of naval manœuvres and so forth are reproductions of actual sketches made at sea on board the ships with which they deal: the pencil is the best descriptive medium for many of these things, hence the heavy proportion of illustrations. The war pictures are drawn from sketches that have been supplied me, or from very full descriptions; the attempt has been in each to illustrate the thing as it appeared, not to produce merely a "picture" of it,—events do not invariably suit themselves to "artistic requirements,"—that, indeed, has been the keynote all through.

Some of the smaller illustrations and portions of the letterpress have appeared during the last five years or so in the pages of *Cassell's Magazine*, *Good Words*, the *Forum* (U.S.A.), and the *English Illustrated Magazine*, to all of whom I make the usual acknowledgments. Other illustrations have also seen the light, or rather tried to see it, in a publication that was strangled in the birth through private reasons on the part of the then publisher; the remaining half now appear for the first time.

FRED. T. JANE.

PORTSMOUTH, *August* 1898.

THE TORPEDO IN PEACE AND WAR

CHAPTER I

TORPEDOES AND TORPEDO BOATS

TORPEDO craft are divided into two broad classes:—

I. Torpedo boats.

II. Catchers and destroyers of torpedo boats.

But there are not wanting indications that it is these last that are most likely to act as torpedo boats in war-time; indeed, most of the ironclads sent to the bottom by torpedoes have gone there by the aid of "catchers." Of that, however, more will be said later; at present I propose to describe the various kinds of torpedo craft, and deal with their *métier* further on.

New as we hold the torpedo boat to be, it is the weapon rather than the idea that is novel. Every reader of *Westward Ho!* must remember the galleys that attacked the ship of Amyas Leigh off La Guayra, and every student of history knows of the "praams" of the great French War. To all intents and purposes these were the ancestors of the present-day torpedo boat, in that they were craft weak in themselves and unable to risk a stand-up fight: they were designed to *harass* an enemy. That is exactly the duty of the modern torpedo boat, and the blowing-up of a battleship is an incident rather than the main object in a torpedo boat's career. The blowing-up of the battleship may be a great and decided gain, but if the fact that torpedo boats are in a certain place prevents battleships from going past or near it for fear of what may happen, then the torpedo boat will have attained its object though it has never left harbour. This "menace" of torpedo boats is now being largely recognised by strategical writers, who know something of the torpedo boat's weak points. In actual history we have had more than one instance of its effectiveness, notably after the battle of the Yalu. In that famous sea-fight the Chinese had with them two indifferent torpedo boats, one of which got quite close to the Japanese Saikio-maru, and fired no less than three torpedoes, none of which hit. In fine, they were very indifferent craft, bad in speed, bad in endurance, bad in their crews. All this the

Japanese must have known; yet at nightfall, after the battle, they feared to attack the badly disabled and retreating Chinese fleet, *because these boats were with it.* Now, no one could accuse the Japanese sailors of timidity or nervousness, and, flushed with victory, they would have been the last people in the world to hold back for any but a very real and valid reason. Their admiral calculated his chances, calculated that on the chance of destroying four Chinese ships he would have to risk the loss of four or five of his best vessels by torpedoes: like a wise man, he forbore to run such a risk.

Now, suppose these two torpedo boats, little swifter than their enemy, had attempted to attack, they *might* have sunk something, but they would assuredly have been sunk themselves. After that, the Chinese fleet might all have been captured. No doubt, apathy rather than wisdom was the reason why the Chinese did not attack, but the reason is beside the point. The main fact is that the existence of these boats with the Chinese fleet saved that fleet from further attack.

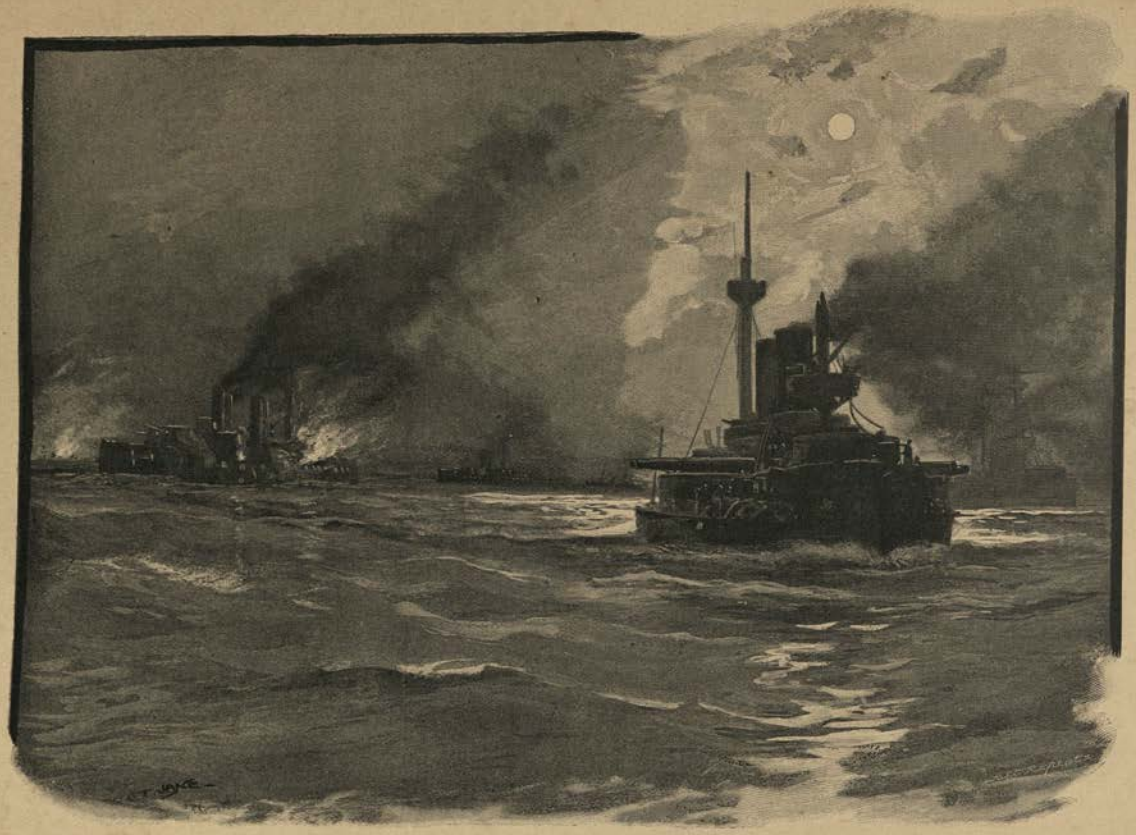
As regards the torpedo itself, here again we have no really new weapon; the "petard" was known in the days of Shakespeare. We can trace its slow upward course, from the mine lit by a fuse to the floating horror that exploded on contact;[1] from the infernal machine, that had to be screwed to the doomed vessel—*vide* the tale of the torpedoist who in the Crimean War screwed a torpedo to his own flagship under the impression that she was a Russian vessel—to the spar torpedo of a few years since. This last device consisted in carrying the explosive at the end of a long spar projecting from the bow of a boat; explosion was secured by impact; it was a method much resorted to in the American Civil War, 1860–64, when the Albemarle and several other vessels were sunk by such means. In the Chino-Japanese War a spar torpedo was used to destroy the wrecked cruiser Yang-Wei.

For a short time in the "sixties," a towing torpedo, called the "Harvey," had a brief period of popularity; but the invention of the "Whitehead" fish torpedo in 1868 almost immediately relegated all other methods to the obscurity of the past. Of late, indeed, we have heard much of such devices as the "Brennan" and "Sims-Edison" torpedoes, machines electrically steerable from ship or shore by means of long wires trailing out astern; and the "Brennan" we use for harbour defence; but the actual and practical value of both is much doubted: *the* weapon of to-day is the Whitehead or fish torpedo.

The Whitehead has been steadily perfected since its invention. It may be best described as a cigar-shaped steel projectile, or submarine boat—whichever term best suits the fancy. It is divided into compartments: the head, which contains 200 lbs. of gun-cotton, the mysterious "balance chamber" and the appurtenances thereof, all of which go to keep the weapon steady on its course, and finally the little compressed-air engine that drives the tail screw. The present Whitehead has an effective range of about 500 yards, and a speed at first of over 30 knots. It will travel eight or nine hundred yards, but at such range hits must of necessity be pure luck. The range and speed are, however, almost daily subject to improvement; 40 knots is hoped for in speed; and as to range, that is very likely to be considerably increased as time goes on. The

[1] About the year 1878, during the war between Chili and Peru, a combatant vessel came across a deserted boat full of fruit and vegetables. The boat was got alongside, but hardly had it touched the ship than it exploded, causing great destruction.

In the recent war the Chinese protected their rivers by floating torpedoes that exploded on contact.



THE RETURN FROM THE YALU

earliest Whitehead, of about the year 1870, had a speed of only 8 knots, the maximum distance that it could travel was about 400 yards, and its accuracy was in no way to be compared to that of the present model.

Altogether, there are no less than twenty-one types of torpedo in our service; but many, of course, are quite out of date, and many of the others have only infinitesimal differences between them. Practically there are but two sorts, the 14 inch and the 18 inch. Of these, that in most general use is the 14 in. R.G.F. Mark VIII., of which considerably over a thousand are in the service—chiefly on shipboard. This torpedo is 15 feet long, carries an explosive charge of 65 lbs. of gun-cotton, has a speed of 26 knots and a range of 600 yards. A Mark IX., similar in most respects but with heavier charges, and three-bladed propellers, are to be found in torpedo boats.

The 18-inch torpedo averages nearly 17 feet in length, has a charge of close upon 200 lbs. of gun-cotton, a speed of 30 knots, and a range of 800 to 1000 yards. None of these were made before 1892.

France uses the Whitehead torpedo, and has a factory for them at Toulon, where they are turned out at the rate of two a week. They have about six sorts—18 in., 15 in., and 14 in., long and short of each calibre.

Italy uses the Whitehead and a sort of "made-in-Germany" edition of it, called the Schwartzkopf. The Chinese in the Chino-Japanese War used, or rather tried to use, this torpedo. Spain also employs it.

The Russian torpedo is also a form of Whitehead, but has a 300 lb. explosive charge.

The Americans (U.S.A.) use the Whitehead, but their real torpedo is the Howell. This is a very blunt-headed machine, rather like a porpoise to look at. Instead of compressed air, it depends for its motive-power upon a heavy fly-wheel that makes 10,000 revolutions a minute; the method is equivalent to the toy engines that are made to run by a wheel and some string. This torpedo is said to have given excellent results. The latest pattern is a 17 inch, 14½ feet long, speed 33–30 knots, maximum range 800 yards. On trial, 332 hits were made out of 345 attempts; but the target was a large one, and hits in practice are always comparatively easy, as the range is known—in action it is not.

The cost of a torpedo is from £500 to £600. British ones are manufactured at Woolwich, and by Whitehead at his works at Fiume in Austria, or at Portland.

Stated in detail, the parts of a torpedo are as follows:—

(*a*) The explosive head (war head). This is only fitted when the torpedo is to be used in earnest: for practice, a collapsible head is fitted. The torpedo explodes by contact, a detonator firing the charge.

(*b*) The air chamber, full of compressed air, equivalent to the boilers of a steamer.

(*c*) The balance chamber. This regulates the depth under water at which the torpedo will run.

(*d*) The engine-room.

(*e*) A buoyancy chamber.

(*f*) A tail, with rudders. A torpedo has lately been experimented with in the German navy whereby these rudders are made to automatically steer the torpedo on the aimed course, and so counteract deflection by tide or current. Beyond the tail come the propellers.

In addition to these there are a great many minor appliances, mostly more or less automatic, of considerable importance.

These include mechanism to make the torpedo rise to the surface or else sink altogether when it has run its set course, and a variety of valves for different purposes.

Torpedoes are fired from a species of gun, a torpedo tube. Cordite is now nearly always the impulse-power, but formerly both powder and compressed air were employed. In any case the result is the same: the torpedo is ejected into the water in the required direction; after that, it takes the depth for which it has been set, and supplies its own motive-power. These tubes when above water can be trained, except in the case of the "fixed tubes" at bow and stern; but it is only in a big ship that they would be trained in action, if there. It is, moreover, highly improbable whether a big ship would attempt to use above-water tubes in action—the risk of an exploding shell sending off the torpedo is too great. In torpedo craft the tubes are loaded and trained in harbour; the boat manœuvres so that the tubes bear when she goes into action. A device, technically known as a director, is fitted on top of the tube; when the ship to be hit comes into line with the sights of the director, the trigger or lanyard is pulled, and the torpedo rattles out, dives, and continues its submarine course upon "the target." Bubbles and splashes on the surface some way astern of where the torpedo actually is, mark its course.

Submerged tubes, save that they are much larger, do not differ materially from above-water ones. They have valves to prevent ingress of water, and in the case of British tubes a bar to keep the torpedo from being deflected or hit by the ship. The Elswick tube, concerning which there has been so much talk of late, has a second tube inside the first, and this tube is projected from the side of the ship, the torpedo passing into the water through it. It is inferior in some ways to the British navy's tube, but considerably superior to the average foreign submerged one, which is often a very erratic weapon indeed. The Japanese ironclads Yashima and Fuji, the Norwegian Harald Haarfagre and Tordenskjold, are the only vessels as yet armed with the Elswick tube.

The torpedo boats of Great Britain are divided into first and second class boats, but the division is a somewhat arbitrary one. The latter, which average 60 feet in length, carry a very small coal supply, and would be of little value for what is usually understood by the term "torpedo-boat work." Many of them are designed to be carried by battleships, presumably on the chance of use in a fleet action; many others are relegated to the defence of harbours, and this is their generally accepted rôle. Some years ago, when the Inflexible was our champion battleship, Admiral—then Captain—Fisher, being in command of her, was asked what he would do in the event of meeting a hostile battleship of equal power to the Inflexible. He is reported to have said that he would, if possible, avoid attacking her with his own ship, but, lying out of sight till nightfall, send his two second-class torpedo boats to attack her. This was some fifteen years or more ago; in this period defensive gunnery has made far greater strides than have second-class torpedo boats.

About the year 1877, the Shah sent out a boat at night to sink the rebel Peruvian ironclad Huascar, but the ship was not to be found, having previously slipped away under cover of the darkness; the only other instance of second-class boats being used was in the 1893 naval manœuvres, when the Vulcan, torpedo-depôt ship, sent out the second-class boats she carries, and these succeeded in "torpedoing" some vessels of the opposing fleet in the Irish Channel, off Belfast.

This Vulcan, which is now in the Mediterranean, is a swift,

THE TRIREME

well-armed floating torpedo factory—a movable torpedo base—and a vessel that could not be aught but a serious menace to a hostile fleet, as the above incident indicates. She can steam at 18 knots if need be, and at a 10-knot speed has, or is supposed to have, a radius of some 12,000 miles. Her armament of eight 4.7 and twelve three-pounder guns, all quick firers, would, in conjunction with her torpedo boats, render her a difficult antagonist to destroy. In many ways she is a unique vessel, the old Hecla that we used before her being merely a merchant liner converted for torpedo use, capable of but a slow speed and practically unarmed. The Italians in their Trinacria have a fast liner, on a par with the Hecla otherwise. The French have a special torpedo vessel, the Foudre, built to compete with our Vulcan, but not so successful, as though designed to carry six boats she has so far been unable to carry them, or hoist them in and out satisfactorily. Her speed, however, has proved good, and it was recently proposed to turn her into a cruiser.

The Japanese have a torpedo-depôt ship building, but no other nations have so far gone in for them.

Our first-class torpedo boats, designed for independent attacks on a hostile fleet, are ninety-seven in number. They average from 80 to 140 feet in length, and date from 1877 to the present day. An interesting and little-known fact in connection with torpedo boats is that their dimensions correspond very nearly, so far as we can judge, with those of the old Greek triremes. Concerning the exact form of these ancient warships there has been considerable speculation and dispute, and many utterly impossible ideas as to their form have been evolved. Of late, however, the discovery of the old docks at Athens, and the piecing together of such fragmentary evidence as has come down to us, has led to more ship-shape notions; it is only concerning minor details that we may be seen to be still in doubt. The trireme in the illustration may be taken as a fairly accurate representation. Beyond the similarity in dimensions, there is, however, no analogy between the trireme and the torpedo boat, the former vessel being designed to fight with the ram, and the ram only. A torpedo boat ramming would soon double itself up.

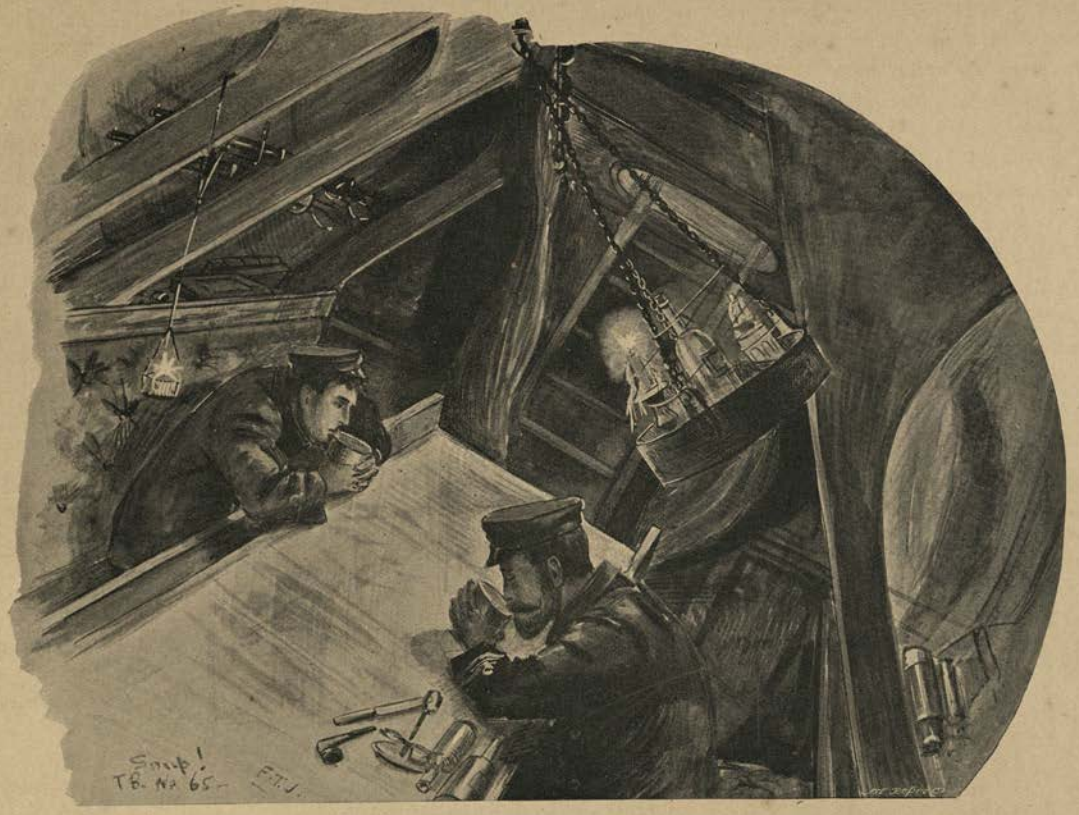
The first five-and-twenty of our torpedo boats are too small for modern requirements; many of the others are verging on the obsolete; only those built in the last ten years can be considered as in any way up to date; these number about a score (from No. 80 upwards). All British boats are nameless, being designated by numbers. The most recent boats—and we will take one, No. 94, as a specimen—come little short of the earlier destroyers, both in size and speed; some foreign boats, indeed, are as swift as many destroyers. No. 94 has a "turtle-back" bow, at the apex of which is situated the conning-tower, from which she can be steered in action. Inside this raised forecastle is a fixed bow torpedo tube, much in the way of the crew who live there, and practically useless for war purposes, since the speed of the boat would probably cause her to run on top of her own torpedo!

The conning-tower is surmounted by a three-pounder Hotchkiss quick-firing gun; two others are *echeloned* one on each side amidships. Two revolving 18-inch torpedo tubes are carried aft; these point in opposite directions, so that it is possible to fire a torpedo on both sides at once. In all earlier boats both tubes had to train nearly in the same direction, a slight divergence of angle being given with a view to ensuring the certainty of one hitting in the event of both tubes being

fired simultaneously. In the boats of the "eighty class," which are similar in general design to the "nineties," a kind of armoured shelter is provided for the man firing the torpedo; this has been done away with in the "nineties," though some sort of protection is afforded by a bullet-proof shield; yet at the best, and in any case, the protection is very slight. Aft of the torpedo tubes there is a second steering apparatus.

Cabin accommodation in No. 94 is, for a torpedo boat, palatial. In boats from No. 25 up to No. 79 the "ward-room" is about the size of an ordinary first-class railway carriage, and here the officers have to sleep and eat and live. That of No. 94 is some 14 feet wide, and four men can sleep on the seats without having to curl their legs up! The total length of this boat is 140 feet, her horse-power of 2000 gives a nominal speed of 23 knots—a rate she very nearly attains to in moderately smooth water. Her displacement is 130 tons; her complement, all told, eighteen men. This boat was built by White of Cowes; Laird, Thornycroft, and Yarrow have recently built very similar boats; no torpedo craft, under the size of "catchers," are turned out from the Royal Dockyards. The "ninety" class are the only British boats with two funnels. These are fore and aft, but neither is quite in the centre of the boat, one being towards the port side, the other towards the starboard. No. 94 was the boat that in the 1895 manœuvres got caught in a harbour by hostile destroyers. With glorious presence of mind, her skipper hoisted a couple of torpedo shoots, so that in the dark he looked to have four funnels like a destroyer, and thus steamed gaily and safely out to sea!

There is a good deal of humour one way and another in torpedo-boat life. What that existence is like is probably of more interest to many people than facts as to the construction of the craft themselves; some account of a sea-trip in a torpedo boat may therefore be of interest, and such an account forms the subject of the next chapter.



DINNER IN TORPEDO BOAT NO. 65

CHAPTER II

FROM QUEENSTOWN TO SHEERNESS IN TORPEDO BOAT NO. 65

NO. 65 is a Yarrow-built boat, some 125 feet long by eleven broad, displacement about sixty-five tons, and a maximum speed of nearly twenty miles an hour. She carries five torpedo tubes: one in the bow for shooting right ahead, two around the forward conning-tower, and two by the after one. The conning-tower aft was used for steering purposes, but both are available.[1] In action the steersman would be shut inside, but in these piping times of peace the rod on which the wheel works is elongated, and he steers on deck, getting fresh air and salt water *ad lib.*, whereas below he would get neither. It is pretty much a case of choosing the lesser of two evils.

No. 65's *personnel* consisted of a lieutenant and a gunner for officers, and fourteen bluejackets and stokers as ship's company. Many torpedo boats are commanded by sub-lieutenants, or midshipmen as acting-subs, while others carry a lieutenant, sub, and gunner. The gunners in each case mess with the commissioned officers, in the long sea-picnic of the annual manœuvres. I call it picnic advisedly; for, despite the work, filth, and discomfort in every form—no one ever washes or removes clothing in a torpedo boat unless during a harbour spell; neither time nor space permit of it—despite all these inconveniences, the life has a charm about it that appeals to officers and men alike. There is a freedom from restraint, an easiness in little matters

of discipline, such as smoking and so forth—all of which go to make the life a fairly happy one for the sailor.

On the conclusion of the manœuvres the torpedo flotilla assembled at Queenstown, whence they made their ways in batches to their respective ports, escorted by small cruisers. The escort is somewhat necessary, not only for the benefit of any boat that may get into difficulties with her machinery, but also as a guide. The little vessels do not carry much in the way

[1] In old Yarrow boats, steering from the forward conning-tower is harder work. Thornycroft boats steer equally well from either place, and the forward tower is generally used in them. The new Yarrow boats steer from forward only.

of navigating tools, and their crews have plenty of other work to see to.

There is a story to the effect that during the manœuvres a torpedo boat that had been "out" one night, chased by a cruiser, made for the coast that lay somewhere to the westward. By and by lights were sighted, and the boat, making her way cautiously in the darkness, anchored in what, judged by the positions of the lights, appeared to be a small bay. Morning broke, and lo, the village was found to be the enemy's fleet!

The flotilla of which No. 65 was the "division" boat, or flagship, consisted of eight boats—Nos. 65, 67, 68, 72, 73, 74, 26, and 27, the two latter being Thornycroft boats.

At four o'clock on a Friday afternoon, in single column of line ahead (*Anglicè*, single file), we left Haulbowline Dockyard, threading past the ironclads and cruisers, amongst which lay our escort, the Gossamer—described in a local paper as "a dark, low-lying hull, with sides painted a piratical grey, towering above the water." This description the Hibernian reporter probably evolved from his own consciousness, but it was quite as useful as the information obtained—from sub-lieutenants of torpedo boats—by another member of the fourth estate. He announced that "No. 41 goes out of harbour every night to tow our latest ironclad failure—the Royal Sovereign—to Belfast Lough, her own engines being incapable of moving her at all. The towing is done at night only, to prevent the newspapers finding it out"!

Outside Queenstown the Atlantic swell was very much in evidence, and, steaming at five-knots speed, the boats rolled in true torpedo fashion, the sea sweeping clean over the red-painted decks—decks so thin that you mustn't jump on them for fear of going through!

Here we remained for hours, slowly steaming, waiting for our escort that came not; the sea, as the sun went down, increasing in violence, until our little ship heeled with each roll as though she would never recover herself. This rolling is something more than merely disagreeable: one year a rolling boat shook her search-light overboard, clean out of its fixings, and everything else nearly followed suit. At last, as the grey night began to rise over against the sunset, the signal to proceed was made. It was by this time too dark for the flag signals to be read, so the signalling was made by the flash code. A few minutes later came the order, "Sixteen knots." Suddenly everyone and everything began to dance, the increased speed causing a tremendous vibration. To write or read became a moral impossibility, apart from the fact that all one's faculties were needed to hold on, though, fortunately, with the increased speed the rolling became less.

The exhilarating motion, the sea air, and the lateness of the hour, all combined to make dinner a consummation devoutly to be wished, and we descended into the little cabin—ward-room and berth all in one. True, there is a small hole on the port side of 65, which contains a couple of bunks; but it is too near the engines to be habitable.

Contrary to what might be expected, the "ward-room"—for so a small plate let in the ceiling announces the place to be called—is by no means stuffy, the opening into the conning-tower at one end and the hatchway at the other causing quite a small gale below when the ship is in motion. The dimensions of the ward-room are some twelve feet by six feet. On the table a few tin plates were jumping and sliding about; above hung a tray containing the liquid part of the feast, swinging at a height just calculated to catch the unwary one on the head.

DESTROYERS AND TORPEDO BOATS IN BASIN IN PORTSMOUTH DOCKYARD

Our mess numbered three—the skipper-lieutenant, the gunner, and myself. One of the two first was, of course, on duty, and ever and anon came his shrill whistle, with which signals are given, ringing clear above the rush and swish of the sea that dashed up over and around our bow, and then flashed off in great white streaks astern.

A delicate and particular palate is an inconvenient thing to take to sea in a torpedo boat; the staple contents of its larder—last year, at anyrate—being *pâté de foie gras*, plum-pudding, and sardines, particularly sardines. It is wonderful how weary one gets of the first when it is partaken of three times a day, and the others are apt to grow monotonous too. True, fresh meat is carried; and a meat-safe is the principal adornment of the stern in many boats, where it is nearly as conspicuous as the white ensign—white by courtesy only, for the dirt and exposure soon reduce it to a black rag. A torpedo boat, however, is a bad place to keep meat in, and even if it keeps fresh, there is always uncertainty as to what the cooking will make of it. French *chefs* are not provided—a bluejacket amateur performs that office.

Presently a small trap-door towards the stern opened, and through it emerged a tin soup-tureen. All the "china" in a torpedo boat is tinware; crockery would be smashed in an hour. We emptied the soup into mugs, and swallowed it in haste, like the Jews' Passover, as the cold mugs rapidly chilled.

This being a "duff-night," fish was the next course—"sardines à l'huile," followed by fried sardines as an *entrée*, concluding with beef and the plum-duff. The beef, as a torpedo-boat feast *menu* once put it, was likewise game!

In this little under-water cabin, with sides little thicker than tea-trays, the chill of the water was soon felt. Even in the Mediterranean, where during the day the sun beating on deck makes the cabins of these boats like furnaces, the temperature at night soon approximates to that of the Polar regions. On deck, too, it was decidedly chill for an August night, but the scenery was more attractive than below. The red, green, and white lights of our little fleet, some close at hand, others far away, gleamed and sparkled across the dark heaving water; while ever and anon showers of sparks burst from the funnels and glinted on the long dark hulls cutting like knives through the phosphorescent sea.

By and by it was time to turn in, so I crawled below again. Our worthy gunner was already there, utilising a few spare hours for slumber. The sleeping accommodation is very simple. No one undresses in a torpedo boat; instead thereof, he dons a "lammey-suit," as the duffle clothing used in Arctic expeditions is termed. Over this an overcoat and a couple of blankets, and the sleeper curls himself up on the leather-covered seat which runs on either side of the cabin as in a railway carriage. Curtains drawn across to a certain extent keep off the draught. I took some time learning to sleep on this narrow bed; indeed, at first it was like trying to lie still during a series of railway collisions, but tired nature eventually overcame the mixture of pitch, roll, and vibration.

I awoke with the first dawn, and, going on deck, found we were off the "Longships' light," which looked sickly and wan in the growing day. The dangerous rocks extending to the right of the lighthouse, which in old time made the spot a terror to mariners, stood up like giant stepping-stones against the smooth silvery water beyond, contrasting weirdly with the boats tossing in the heavy swell outside. At the rate we were steaming they

soon became small in the distance, finally disappearing behind the volumes of brown and purple smoke cast forth by a boat "stoking-up."

An hour or so later, one of the "seventies" became suddenly enveloped in a cloud of white steam, looking for all the world as though she had blown up. It was merely something gone wrong with the machinery, however, and she was blowing off steam preparatory to adjusting things a bit. The rest of us slowed down speed to five knots, a welcome relief after eight hours' vibration. We seized the opportunity for breakfast; but our respite was soon over, and the jumping and jolting began anew, though the sea by this time having gone down somewhat, it was little more inconvenient than standing on top of an omnibus racing down a stony road.

Our course had been well out in the Channel, as we were making a bee-line for Portland, which we sighted early in the afternoon, and at the same time all the hatchways were fastened down. This seemed a curious proceeding, as the sea was smooth and peaceful, disturbed only by the zigzag wavelets that broke in our wake and the rainbow-tinted foam curling over our bottle-nosed bow.

Suddenly, and without warning, came a change. High up in the air rose our stern; down, down went the bow into the bosom of a great wave that swept along the deck, foaming and hissing as it came. All around us were white-crested waves and sheets of spray. Our little ship seemed a mere plaything to the sea, but bravely she held her way, until the waves subsided as quickly as they had risen. We had passed through the "race" off Portland, a curious phenomenon caused by the set of the tides over a reef. At times this "race" is a positive danger, as our skipper had found on a previous occasion when he got into it in a training-brig. The weather was bad, and the vessel at once became unmanageable, spinning round and round like a top, and in this fashion she was carried—fortunately—right out into the Channel.

The hatchways were opened again, and I went below. Queer little holes these hatchways are, little more than the breadth of a man's shoulders in diameter. There is a tale of a stout torpedo gunner, who, having sprained his ankle, stayed below for a while. When, a few days later, he tried to get on deck, he was unable to do so—the lack of exercise had increased his girth beyond the dimensions of the hatchway!

Our little fleet was now formed into single column of line ahead—a pretty evolution, smartly performed. Portland by this time was close at hand, and the flotilla slowing down steamed through the opening in the breakwater, past the Channel fleet, and under the shadow of the great hill on the left, where they came to rest side by side against a high pier. At sunset-time we resumed our voyage. What a sunset it was! Gold and purple and scarlet clouds tossed wildly above in a crimson sky; on the left the great blue mass of cliff frowning and pitiless; around and beneath, a black and inky sea.

On Sunday morning one boat was missing, and No. 26—a Thornycroft—was sent back to look for her. In the now glassy sea, 26 came alongside within hailing distance, and then turning a circle almost in her own length, went back on the course, leaving a long foaming track in her wake—the circle she had turned plainly marked in the water. The missing boat was soon found,—some trifling defect in the machinery had delayed her,—and the squadron at increased speed raced past

TORPEDO BOAT PASSING A BATTLESHIP

Dover, passing like a flash innumerable ships going in the same direction. At length the Nore and the red-sailed barges came in view, low-lying Sheerness — Sheernasty, in naval phraseology—hove in sight, and at noon precisely the boats came alongside the dockyard jetty, having been only forty-four hours on a trip that included three stoppages, besides a four-hour stay at Portland. This performance, conducted without a single mishap of importance, takes the ground from under those who are eternally crying out about breakdowns, and it must not be forgotten that it was after five weeks' knocking about and rough usage. The ease with which this (one of several) voyage was made shows clearly that a mosquito fleet is quite capable of taking the offensive in other places than home waters.

LIBRARY OF THE BOMBAY BRANCH OF THE ROYAL ASIATIC SOCIETY

CHAPTER III

THE TORPEDO CATCHER

THE advent of the torpedo boat soon caused men to cast about for an antidote. This was particularly so in England, which, more than any nation, has to look to be attacked by torpedo boats—"the weapon of the weaker power," as the experts call it. In the year 1885, the Swift, torpedo catcher, was built; but as she was only 150 feet long, she proved far too small for the work required, and has long since been turned into a torpedo boat, now figuring as No. 81. She carries six three-pounder guns and a crew of twenty-five men. The Scout and Fearless of 1580 tons soon followed, but these turned out too slow and too heavily armed for the work required; and in the Rattlesnake, launched in 1886, we have the first genuine "catcher." This ship is of 550 tons, carrying one four-inch and six three-pounder Hotchkiss quick-firing guns. The builders, Messrs. Laird of Birkenhead, though the money was subsequently refunded, were fined £1000 for making her engines too heavy; and it is worthy of note that the Rattlesnake is the only ship of her class that has never broken down in any way. Her actual speed at sea is little under 18 knots, and she has been known to exceed that at a pinch. The Grasshopper, Spider, and Sandfly, sister ships, are not able to make much over 13.5 knots except on paper. Indeed, none of the speeds given in tabulated lists of ships are reliable. These speeds were made under the most favourable conditions, with picked coal, picked stokers, and in smooth water. The more rough and ready conditions at sea reduce a ship's speed by two to four knots; the fouling of the bottom by seaweed and barnacles, and the gradual ageing of the machinery, compels a still greater reduction in time. The most startling instance of this is the case of the Spanish cruiser Reina Regente. In 1888 she made 20.7 knots; at the time of her loss she could barely do 10 knots, though in this case gross neglect of the machinery is a fairly natural assumption. In our own navy we have a ship that attained 12.6 knots on a trial trip; a foul bottom and eighty tons of barnacles reduced her speed later on to 4 knots. Even with a clean bottom, the speed of a ship—unless she be a very long vessel—suffers tremendously directly the sea gets up, and torpedo boats are especially liable to fall off in this way. Hence in 1891 the Rattlesnake with 18-knot speed steamed round and round a 21-knot torpedo boat!

In 1888 the Sharpshooter was laid down. The Rattlesnake class suffered from seas breaking on the low forecastle—the Sandfly nearly foundered in the Bay of Biscay from this cause—a better sea-boat was desired, the Sharpshooter of 735

H.M.S. RATTLESNAKE

H.M.S. SEAGULL

tons was the result; and twenty-seven vessels of this class have been built, the displacement gradually rising to 1000 tons.

The Seagull as she was in 1894 may be taken as a representative vessel. She is 230 feet long and of 735 tons displacement. The forecastle forward is some 13 feet out of water; abaft the foremast her deck is about 6 feet above the water-line. Two three-pounder quick-firing guns are carried in the crew's quarters in the raised forecastle, two more amidships on deck. There is a fixed torpedo tube in the bow, while a 4.7 quick-fire gun is mounted on top of the forecastle. A second 4.7 is carried in the stern. There are two funnels, wide apart; and just abaft the after funnel are two pairs of torpedo tubes—18-inch tubes on the port and 14-inch tubes on the starboard side. A spiral staircase up through a ventilating cowl leads to a fore-and-aft bridge, so as to render it less difficult to reach the fore-bridge in bad weather. In the catchers of the Rattlesnake class it is often an extremely arduous task to get forward in a gale, the "well" amidships being generally full of rushing water: the Seagull class are not so "wet." They are terribly lively boats, however, the motion being, if anything, worse than that in a torpedo boat; and in none of these craft can life be called a bed of roses. The complement all told is about ninety. The officers are—a commander or lieutenant-commander in command, two sub-lieutenants, and a gunner. The non-executive officers include a doctor and two engineers. Cabin accommodation is rather limited; the captain's cabin is fairly roomy, the ward-room as large as can be expected; but the officers' cabins are very diminutive, being but some six feet square. As these are one too few, one officer has to sling a cot in the ward-room, and the gangway outside has to do duty as a bath-room. In common with all small craft, ventilation at sea in the Seagull is existent only in fine weather. Her actual sea-speed is little over 15 knots; the speeds of all this class fall short of the anticipated result by several knots, and they have been much blamed on that account. They are splendid sea-boats, however, and though liable to be easily sunk in action by a cruiser, would be well able to destroy torpedo boats or destroyers that might venture out in bad weather, and they can keep the sea for about a week without re-coaling, if need be. The Seagull class, carrying as they do several torpedo tubes, might in a fleet action await an opportunity to use their torpedoes under cover of the battle smoke; they have had that rôle assigned to them in manœuvres. In actual warfare, the Lynch and Condell, of this class, torpedoed and sunk the Chilian ironclad Blanco Encalada, in April 1891, with little damage to themselves, early one morning, while it was yet almost dark. (See p. 143.) A day or so later they were beaten off by an armed transport, so they appear to be more dangerous as torpedo craft than as gun-boats. In the Chino-Japanese War, the Kwang Yih, Chinese torpedo gun-boat, with an actual speed of 12 knots, attempted to torpedo two swift Japanese cruisers off Baker Island, in the daytime, but was soon destroyed.

At the present time many catchers are being re-boilered or re-engined, the Seagull among the number. These "faked-up" vessels are all much swifter than they were before, over 18 knots being made with ease.

Their comparative failure led, however, to the evolution of the destroyer; but before proceeding to describe that class I will devote a chapter to the "living conditions" in a catcher.

CHAPTER IV

LIFE ON BOARD A TORPEDO CATCHER—THE RECORD OF A CRUISE IN H.M.S. GRASSHOPPER

I JOINED the Grasshopper at Milford Haven. A wicked little craft she looked, a long black hull in the silver shimmering sun-path on the upper reaches of the Haven; motionless as a sleeping serpent, and with all its evil beauty.

When I got to know her better, her own name seemed to supply the best simile, for in the matter of unnecessary springs over sea hills and unexpected plunges into billowy valleys she has no equal; but more of this anon. As I saw her then, she was still enough to delude anybody; and the coxswain of the whaler's description that life in her was like "riding on a real grasshopper, wot's allus trying to jump a couple of inches farther than he can manage," I passed by as merely a picturesque romance.

> "She jumps upon a whopping wave,
> And ships a great green sea,
> Then sticks her fo'ke'sail in the brine,
> And rolls most orfullee."

"That," continued the coxswain, "is wot our lower-deck poet wrote about her, which, though it mayn't be like Tennerson or an orsifer might write, is good-sounding, and goes well to a hymn tune." But further description was cut short by our arrival alongside the Grasshopper, I; twin-screw gun-boat, 1st class, 525 tons, I.H.P. 1600 N.D. (2700 F.D.),[1] as she is described in the Navy List phraseology.

She was commanded by Lieutenant Arthur Barry of the Vernon, and carried as other officers, two sub-lieutenants, a doctor, and an engineer. With petty officers, bluejackets, marines, and stokers, our ship's company totalled sixty-nine, a smaller complement than the vessel really needed; but as she has only room for about forty men all told, it was more than enough for comfort. Acting on the advice of the skipper, I took my bearings in the ship before we put to sea—not a very long task in a space of 200 by 23 feet.

Some ten feet right aft is occupied by a narrow watertight compartment, a combined lumber-room and cabin for the captain's servant, who slept there on top of a torpedo tube, the boxes and trunks coming in handy to keep him from falling off. Ahead of this in another watertight compartment is the commander's cabin, roughly ten feet square by seven feet high, containing, in addition to the usual ship's furniture, the fighting end of the torpedo tube above mentioned. To use this tube, the

[1] These mysterious initials refer to her horse power with "natural" or "forced" draught.

A SKETCH IN THE AFTER-STOKEHOLD: H.M.S. GRASSHOPPER

ward-room door has to be unshipped and pieces taken out of all the walls *en route*; the torpedo is then brought from amidships suspended from a small railway that runs across the ceiling.

Going forward from the commander's cabin, one enters the ward-room, a slightly larger compartment, its deck covered with hatchways that lead to unseen depths below the water-line. The walls were ornamented with a locked-up ship's library, the key of which no one had ever seen, a big iron safe that regularly broke loose and rolled about whenever the weather was at all bad, and a couple of small settees, one of which formed my extempore cabin. The irrepressible safe was not the only thing we objected to in the ward-room, however, for somewhere underneath was a steering-wheel for use in action. This wheel was connected with the one in general use on the fore-bridge, and no amount of oil or grease prevented its making a noise like continuous thunder whenever the helm was altered, so that all conversation had to be carried on in the intervals. From the ship's library, too, came noises enough to warrant a volume from the Psychological Research Society on the subject of books that jingled like glass.

Outside the ward-room, grouped around the base of the main-mast, were the steward's pantry and four officers' cabins, each rather smaller than an ordinary double-bed. Hereabouts, also, were situated the cabins of our two marine servants—"me and the old soldier," as they termed themselves. Their cabins were not extensive, but they took it turn and turn about to sleep in the better of the two, which last was a small hole into which a man could just crawl; while the other slumbered behind a big sea-chest which used to roll on top of him in bad weather. "Sort of thing that might give a man the nightmare," as one of them remarked. There were two other marines employed in the pantry, but no one ever saw them save in harbour; at sea they went to form a miserable group who lay on top of the galley round the funnels, and longed for death. Amidships, below the deck, which is here only some three feet above the water-level, are the engine room and stoke-holes—veritable infernoes of coal-dust and burning white light. There are four furnaces in each hold, and seven feet is the utmost distance one can get away from their fiery mouths. It may be all right when you're used to it, but to my mind it was too suggestive of the latter end of Faust to be agreeable!

The Grasshopper's bow terminates in a foke'sle raised to the level of the bulwarks amidships. On deck is the conning-tower, bridge, and so forth, with a Long Tom gun in front; below, a stuffy apartment less than twenty feet long. This is the "lower deck"; and here, often knee-deep in water, lived some sixty of the crew, their hammocks slung three deep, one above the other. An awful life they must have had of it in this "sardine-box," but the British sailor is made of tough and philosophic material, and in all the fleets there was not a more contented ship's company than the Grasshopper's.

The Grasshopper was attached to the B Red fleet, which consisted of thirteen battleships and cruisers under Admiral Seymour. About three o'clock on a Monday afternoon the ships began to get under way, and after waiting a couple of hours for our opposite number, the Sheldrake, which distinguished herself by trying to get her port anchor cable into the starboard hawse-holes, and *vice versâ*, the fleet put to sea.

Slowly the long line ahead of us, gathering way as it went, steamed downwards past the quaint little town of Milford and Dale Roads. Smaller and smaller grew the figures waving on the shore, and an occasional heave of our little ship gave a fore-

"LUNCH IS READY, GENTLEMEN"

taste of what was coming. By the time dinner was ready it had come.

"Up and down the Grassbug went, sir,
Like a racing omnibus;
Up and down and round about, sir,
Till it made them bill-i-ous,"

sang the lower-deck poet relating the event, and it cannot be better described; added to which my recollections of the next day or two are exceedingly hazy. Once, indeed, as I lay on my extempore bunk in the ward-room, I heard a crash of exceeding magnitude, and looking for the cause, saw that the ward-room table, which had just been laid for lunch, had broken loose from the screws that should have held it to the floor, and was lying end up in a corner of the ward-room amid a confused heap of chairs and broken crockery. Presently the débris was increased by the addition of a marine servant and the doctor, who had been trying to save our only water-jug from destruction. It was eventually rescued, minus both its mouth and handle, and cracked in several places; but we managed to get it to hold a good three inches of water for the rest of the cruise.

By and by the weather moderated somewhat, and I paid my first visit of any length to the deck; we had changed course, and were now steaming against the sea. This made the ship roll less, but she pitched even more viciously, seas breaking continually over the fore-bridge and covering the deck amidships. Just about this time we met our sister ship the Rattlesnake, steaming comfortably along with the wind astern.

"How does this weather suit you?" her skipper semaphored

to ours; but the latter, who had just been deluged by a green sea that met him as he clambered into the fore-bridge, made no reply fit for publication.

The rest of the fleet were not to be seen; it transpired that they had made for Falmouth, while we being the junior ship had to go into Penzance for mails. We came into the open roadstead by St. Michael's Mount in grand style—full speed ahead; and all that the watchers ashore could behold were a couple of slim masts and a quantity of white foam, under and behind which was the lively Grasshopper.

A few hours later saw us rejoining the fleet at Falmouth. There was a regular forest of military tops ahead of us, for the whole of the Red fleet, numbering some thirty vessels, were here assembled, and beautiful they looked in the evening light.

INTERIOR OF WARD-ROOM, SHOWING OPEN WATERTIGHT DOOR

After our painful experience of being

> "Rocked in the cradle of the deep,
> So hard that not a soul could sleep,"

—as the lower-deck poet put it,—we appreciated the comparative stillness of Falmouth Roads to the full, and settled down to enjoy our rest in harbour over a game of cards, rendered doubly exciting by the way in which tricks taken by those sitting fore and aft invariably slid along the table till they joined those of the players at the sides.

In the early morning, just as it got light enough to distinguish objects more than a few yards off, we went into the inner harbour to water; but our stay was of short duration, though we managed to lay in some "Devonshire cream"—as our mess caterer per-

sisted in calling Cornwall's most famous production—and other provisions that we expected to need now that the weather had improved.

From Falmouth the B fleet made for Lamlash in the Isle of Arran, doing steam tactics on the way in a sea that had now lost its terrors, till one day the island of Ailsa Craig showed like a great sugar-loaf on the horizon; and soon after Lamlash was before us—the heavy mass of Holy Island to the right, ahead and on the left hand bright green fields with little pearly white houses shining in the sunlight; above the fields wide stretches of red heather and golden gorse, and away and behind them all three great blue mountains, whose heads were lost in the clouds that crowned them. This is Lamlash on a summer's day.

Here we had to coal, and wait till "war" should be declared; and that meant pleasant days in that deep, still harbour listening to the wind that, howl as it might outside, could not reach us there. Not that we attained to absolute stillness; for the captains of the numerous big pleasure-steamers soon found out that the wash of their paddles would make the little Grasshopper roll her scuppers under, and apparently had bets amongst themselves as to who could move her most. It was all right when we got used to it, but at first we found it annoying to be hurled unexpectedly against each other. Afterwards, when we saw a steamer coming, we used to sit down in the ward-room and have wagers as to who could keep on his chair the longest.

After the narrow limits of the Grasshopper, the prospect of being able to walk more than six feet in a straight line was charming, and shore-going trips were organised. We longed to climb the distant "Goatfell," and also to capture a live grasshopper for artistic purposes. In a weak moment I had volun-

"FULL SPEED AHEAD"

GOING FORRUD: H.M.S. GRASSHOPPER

FORE BRIDGE, H.M.S. GRASSHOPPER: STEAMING AGAINST A HEAD SEA

teered to adorn our dinghy with a picture of the lively insect whose name we bore, but my effort was characterised as a green elephant. To tell the truth, none of us were certain as to what a grasshopper was like; all we were unanimous about was that it was green and had things to hop with. Our sub, who undertook Gunnery Jack's duties, was in favour of painting a picture of a Nordenfelt gun's hopper with some legs to it; but the skipper being a torpedo man, and consequently the natural foe of guns and gunnery, stoutly opposed this pictorial pun. After hunting a field for a couple of days, we caught a grey-green insect that hopped and chirped, but its colour was so faint that we concluded it was only a cricket, and abandoned the search. Instead thereof, we inspected a grasshopper that did duty as figurehead on the ship's bow, and which certainly differed from the thing we caught. A copy of this was painted on the dinghy, with alterations to suit everybody's requirements; and when completed, the insect had eleven legs, five wings, a couple of trunks, and eyes all over him. He didn't look quite right even then, but by putting a big "G" round him and writing "Grasshopper" underneath, we made it pretty clear what he was meant for, and

A TORPEDO ATTACK. FIRING A TORPEDO

retaliated on critics from the Barracouta and other ships by expressing sympathy for those whose vessels possessed names that did not lend themselves to pictorial representation.

By the time we had settled the grasshopper question leave was stopped, so of the beauties of Arran we saw but little.

Such other things as we accomplished are thus noted in the journal of one of our mess:—

"Came back after a feed and rowed the other fellows back to the ship. Rowed to Immortalité by mistake. Fellows said it was the only way I'd get there, and laughed—but don't see the joke — both ships got two masts and two funnels. Immortalité fellows made rude remarks on my error, and seem to think it a joke too."

. . . . . .

"Three natives came on board to call on us to-night. I suppose they're all right as their names begin with 'Mac'—but none of them wore kilts."

. . . . . .

"Been fishing all day. Caught nothing but an empty pickle-bottle and a red herring, which I hauled up when I went on deck after lunch."

We did a good bit of ship-to-ship visiting in the early evenings, and romantic indeed were the yarns spun on these occasions.

"Talking about that," said our skipper, on one such occasion on board the Barracouta, when the conversation had turned on flotsam and jetsam,—"talking about that, we had a queer experience coming round from Penzance. About two bells in

TORPEDOED

the middle watch the look-out man sang out that there was a man in the water swimming after the ship"—

"Caught up with you pretty quick, I suppose?" interjected one of the Barracoutas.

Disregarding this insinuation against the Grasshopper's speed, the skipper continued: "Well, we slowed down, and then found it was an ox, and not a man at all. We hauled the beast on board, and, would you believe it, we picked up no less than seventy-two head of cattle that night. I fancy some cattle-boat must have gone down thereabouts. Well, having got them all on board, we steamed into Falmouth, where we sold them for the benefit of the mess."

There was silence for a while, till some one remarked—

"I've been calculating the cubical contents of your ship, and find that on a liberal computation each ox had a trifle over two cubic feet of space. Now, an ox"—

"I forgot," put in our skipper,—"I forgot to mention that *the oxen were tinned!*"

The next night we put to sea at sunset, and scouted about off Ailsa Craig with the Barracouta as consort, seeing if we could spot any torpedo boats skulking inshore—the sort of job that a great deal of powder and shot will be wasted over in war-time. To detect a torpedo boat is an exceedingly difficult thing; a low-lying bit of rock, a long dark wave, a cloud low on the horizon—any of these look just like a torpedo boat. Waves, in particular, often get a battleship's guns and search-lights directed on them, while the real thing slips past unobserved.

However, we found no torpedo boats round the island, and signalled as much back to the fleet, which was now coming up fast, with position-lights out, and looking for all the world like a vast city spread over miles of the land behind it. Presently they passed, steaming at nearly 14-knot speed, so close to us that we could almost have thrown the proverbial biscuit on board them. The moon shining full and bright against them, the ironclads looked like huge ghosts shooting along, a great wave hissing and tumbling some fifteen feet ahead of the bows of each. There was something exceedingly romantic in this wild rush down Channel, with torpedo boats all along the Irish coast waiting to fall upon us, and a superior fleet coming to attack us behind them. When ships blaze away at each other in mimic warfare it is obviously make-believe, but torpedo attacks have ever an element of realism in them, and no matter how frequently they be repeated never grow monotonous; yet, curiously enough, it is the big-ship battle that most appeals to the public imagination, and no one has yet laid himself out to graphically describe a torpedo fight as seen from the deck of an ironclad. It is, however, a difficult thing to describe, at any rate to describe with that accuracy which, if not always obtained or obtainable, is usually expected of and sought after by the good folk who accompany manœuvres for the benefit of their country in general, and our admiral's strategical and tactical qualities in particular.

It is such an excessively momentary affair. The ship is going along, all lights out, nothing visible save black smudges here and there against the night—the look-out men peering into the gloom.

A hail, a bang, some shouting; more bangs, possibly rockets and search-lights, an intolerable stench, a distant cheer from the blackness, a momentary gleam of sparks, and all is over.

Probably only a few men knew whence the attack was coming, and from the moment of the first gun till there came

the awful stench of the Holmes' light fitted at the torpedo's head may have been a minute, or possibly less. A thing of that sort cannot be properly described, because it all happens infinitely more quickly than the necessary words take to read.

Torpedo boat attacks, like everything else, are logged with characteristic brevity, but occasionally a little quaintness creeps in.

"Torpedo boat sighted port beam 0.45 A.M. Man and arm ship. Burnt search-lights. Boat out of action 0.47 A.M." is the usual style. The torpedo-boat report may possibly run—

"Sighted battleship 0.40 A.M. Secured hit with torpedo 0.44 A.M. Battleship opened fire 0.45 A.M."

There was never a sham torpedo-boat attack yet in which both sides did not claim the victory.

Of late, however, since the advent of the destroyer particularly, torpedo-boat attacks have been rare: we have fully recognised now that the ship's guns are only the final and last line of defence; that the business of naval warfare is to keep the boats from ever getting a chance at the ships.

Our vision of the fleet was short-lived, for they were soon swallowed up in the night mists ahead. When they had gone by, we put on full speed and came up on their port quarter some two miles to leeward, but as they had extinguished their lights we could see nothing of them save the bright masthead light of the flagship or a momentary glimpse of a black hull streaked with phosphorescent fire, as a ship crossed the path of moonlight in the sea. And thus the night wore on. No one thought of turning in, but it was weary work waiting for the boats to attack.

According to the regulations, "one or more competent persons, of whom one at least must be an officer," had to take the time that an enemy might be under fire; and the doctor volunteered for the post. While he was endeavouring to discover the scope of his duties from our navigator, a search-light suddenly shot out from the Thunderer, and the next moment the whole horizon was one mass of bright and twinkling stars. Sound there was none, but the stars grew brighter and more frequent, as in the middle of them, moving rapidly in an opposite direction, appeared a bright red spark, changing to a speck of silver as the search-light fell upon it, and then stars and sparks and lights disappeared altogether. Not until the next day did we find out what had happened—how the Blue boats had got among our ships and "sunk" some two or three of them. However, the sunken vessels held on their way the same as the untouched ones, and at the rate we were steaming the torpedo-boat haunt was soon past.

Our time-keepers had not had previous experience of torpedo attacks, and their report was scarcely in accordance with the official one. It ran:—

"At 2.17 in the morning observed light rapidly approaching Barracouta or some other ship. Barracouta opened a heavy fire on the torpedo and sank it, after it had been one minute forty-two seconds under fire. All the ships then fired for several minutes, but I could not see what at. If there were any torpedo boats near, they sank them, but as I cannot be positive about this I prefer to make no definite statement. In my opinion, however, the attack was a complete failure."

I pass over the rest of the night and the following day, as nothing happened save the junction between ours and the A Red fleet.

"We shall probably come up with the enemy at daybreak to-morrow," advised the skipper the next evening, "so you'd better turn in till then." But I found it one thing to receive advice and another to follow it. The rolls of the ship were now so heavy and rapid that my attempts at slumber invariably

RECOVERING A TORPEDO

culminated in my being thrown, bed and all, on to the floor every time I began to drop off to sleep. After the twenty-somethingth attempt, I decided to lie where I fell, having first constructed a breakwater of chairs to catch the safe and such like ward-room properties that might chance to journey in my direction. Alas! there was no rest even here, for I simply accompanied my breakwater in a career across the ship and back again, and, finally giving it up as a bad job, went on deck, and seizing a lull, succeeded in mounting the fore-bridge. It was a cold night, but I had taken the precaution to don an extra waistcoat and a couple of overcoats, and with a travelling rug over all, and a towel round my neck, managed to keep warm. Before me was a sight well worth the seeing. To windward rose a great black billowy wall, towards which we rolled until the crest of the wave lapped the bridge, and then we mounted high into the air towards the moon, that made a turbid path of light in the troubled brown waters below. It was little more than half a gale; in a big ship it would scarcely have been noticeable, but to us it seemed of great magnitude. There is nothing like a small ship to behold the sea from, though, rolling from thirty to forty degrees, as the Grasshopper did, and that nineteen times a minute, one had to hold on pretty tight to see much. The sea at night is a solemn thing and a sad one. In the sunshine of the daytime it is bright and smiling, but in the dark hours there is nothing but terror and a sense of pitiless power in the black heaving waves that have swallowed up so many brave men's lives, and will swallow so many more in the days that are yet to come.

A dim white figure that appeared ever and anon upon the poop added to this effect—that is, until my investigations into its cause put in a touch of bathos, for I found it was only the skipper in his pyjamas popping on deck to see if all was well.

At daybreak we heard the sound of guns, and in the chill morning light made out miles and miles of ships steaming in parallel lines and blazing away at each other. The battle of Holyhead, in which over fifty vessels took part, was in progress. It was in this fight that the Grasshopper, left alone ahead of the Red fleet, perpetrated the single-handed engagement with a couple of hostile ironclads, which caused so much comment in the newspapers at the time. Without presuming to enter into the question from a manœuvre point of view, I think one may say that a "catcher" in such a position in an actual battle would have a pretty good chance of getting a torpedo or two home before she was sunk.

After the battle (which was indecisive), our ship went into Holyhead to coal and water. Our principal recollection of Holyhead has to do with the invariable bluejackets' custom of carrying letters and small articles in their caps. The ship's postman, when he went ashore with mails, was directed to get some Parcels Post "Fragile" labels. When he returned, the labels were not forthcoming, nor could he explain what had become of them, till we noticed the back of his head, which was covered with red labels inscribed "FRAGILE." The postman probably heard a good deal of this when he got back to the lower deck.

We rejoined the rest of the Red fleet at Dale Harbour, and that afternoon we had a diversion in the shape of a short visit from my wife and sister. After some ten minutes' struggling—for the ship was rolling a good deal—they managed to get on board, and as each roll sent their chairs sliding along the deck, they alluded to it as "a pleasant dreamy motion," a phrase that

caught on with us a day or two later, when all the ward-room furniture and our "duff-night" dinner were upset by the violence of the waves.

In Dale Roads we also encountered torpedo boat No. 86 of the Blue fleet, whose commander had incautiously put in to this Red harbour. He was enticed on board the Grasshopper, and thence to the Anson, where he was made a prisoner in practice as well as in theory; while No. 86, under command of a Red officer, went forth to destroy the unsuspecting Blues.

This actual capture was the only effective method of putting down the irrepressible torpedo boats, which had a "life" for every day of the war; for though they might be "destroyed" one day, a lapse of twenty-four hours saw their "out of action time" completed. No. 72, under Lieutenant de Chair, whose capture by Arabi Pasha was one of the features of the Egyptian War, was a particular thorn in our admiral's flesh. No sooner had we put to sea again than he came amongst the fleet in a fog, and torpedoed a couple of cruisers before they knew anything about it; and the very next day he was again on the war-path. This time the whole of the cruisers near him gave chase, and after an exciting run he was cornered by the Grasshopper; but the actual capture did not come off, to the great disgust of the

STEAMING AGAINST A HEAD SEA—PASSING THE THUNDERER

CATCHERS IN A GALE

fleet punster, who had prepared an elaborate impromptu about De Chair having been captured by Arabi in '82, and by a Barry in '93.

After this event things went on tamely enough, till we were joined by the Narcissus, which had had to put into Milford early in the manœuvres, and was torpedoed with exasperating regularity as soon as ever her "out of action" time elapsed. When the unlucky cruiser at last turned up, the whole fleet made for the enemy, and encountered them at daybreak on 4th August in another great and indecisive battle in Cardigan Bay, and with this battle the manœuvres terminated.

The run from thence to Milford was accomplished in the teeth of a heavy gale, that made things pretty lively for us in the "catchers," though we took care to stand in interesting attitudes when passing a big ship. Seas swept the Grasshopper from stem to stern, tons of water fell upon the foke's'le, and, spurting high over the fore-bridge, fell in a solid sheet upon the funnels. Everything broke loose and banged about as it listed; we were all drenched to the skin. Meals we had none, nor was there prospect of any till we should get into Milford; discomfort had reached its utmost limit. Clinging to the main-mast shrouds, I heard an angry exclamation from our engineer, and, looking up, saw a sight enough to aggravate a saint. Abreast of us, firm as a rock, though the seas were breaking clean over her fore-turret, was the old Thunderer, the steadiest ship in the navy; and standing in a sheltered position on top of her after-turret, a pitying smile on his face, stood a man in evening dress, waiting to descend to the creature comforts in the ward-room below.

However, all things have an end, and at last we got into Dale Harbour, whither the Royal Sovereign had already gone. As we passed the great flagship with her brightly-lit ports, we first fancied that we had got off Milford Town, there seemed no end to those rows of lights.

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CHAPTER V

DESTROYERS

THE first of these, the Havock and Hornet, built by Yarrow of Poplar, were tried during the 1894 naval manœuvres, and stood well a bad knocking about in the Bay of Biscay. Further particulars of this will be found in Chapter VI.

Later vessels differ little in design, but are some 20 feet longer; others recently laid down are slightly larger still, and have an increased speed. There are those who prophesy that eventually the destroyer will grow to be 300 feet long, with a speed little short of 40 knots an hour; but under the latter head we must remember that *sea* speeds have really increased comparatively little in the last twenty years. Twenty years ago the ironclad Agincourt made 14 knots at sea: our latest battleships cannot make very much more[1] save on trial trips. To day, 24 knots is about the average highest sea speed for our swiftest destroyers, and it is rather in trips under favourable conditions and in smooth water that "the great modern advance in speed" is attained.[2] Every extra fraction of a knot means a tremendous and disproportionate exercise of extra horse-power. Moreover, bad weather—one may almost say the usual sea weather—very soon knocks off a good many knots from a small ship.

As a sample destroyer we may take the Boxer. She is 200 feet long by 19 feet broad, with the usual flattened Thornycroft stern and tumble-home side. A turtle-back forecastle makes her look like a large edition of torpedo boat 94, which indeed she in many ways is. The gun on top of the conning-tower is a 12-pounder Q.F., and on the deck alongside, so mounted that they can fire right ahead, are a couple of 3-pounder Q.F.'s. Two more are carried amidships, and a fifth on a raised platform aft. Just before this last gun are a couple of 18-inch torpedo tubes. Her engines work up to 4800 horse-power, and the speed is about 27 knots in smooth water. Her draught of water is 6 ft. 9 in.—a good six inches less than some torpedo boats draw. Her displacement is 250 tons, so she has 16 horse-power for every ton. In the old days one horse-power to two tons was—as, for instance, the Triumph, launched in 1873, with 6540 tons displacement and 3500 horse-power—frequently

[1] The sea speed of the Majestic is reckoned at 15 knots an hour.

[2] In this connection I may quote an analagous case on land. Brunel in the "fifties" made 100 miles an hour on an engine on the G.W.R. It is not so much the *possible* but the *general* speed that has increased since those days.

TORPEDO BOATS SURPRISED BY DESTROYERS

found in a steamer,[1] and this fact tells how great is the extra energy required to increase the speed by a few knots. As may be imagined, the vessel is a box of engines, and accommodation scanty indeed. The commander's cabin is a small hole full of corners just big enough to swing round the proverbial cat. There is no passage thence to the ward-room; it is necessary to go on deck and descend again. The ward-room is about the same size as that of a "ninety class" torpedo boat—smaller, if anything—two bunks on either side, the usual table in the middle. The complement is forty-five; a commander or lieutenant as captain, one lieutenant or a sub-lieutenant, an engineer, and a gunner. These three last live in the ward-room. The crew find their quarters in two tiers under the turtle-back, where they have to lie pretty close—fortunately for them, the Boxer, unlike the earlier destroyers, carries no bow torpedo tube. The Boxer has two short big funnels, rather wide apart; some destroyers, like the Havock, have two close together; some three funnels; some, like the Charger and Hasty,[2] two lofty ones; others, again, like the Hornet and Dragon, have four short uptakes. Otherwise, the ships are like Chinamen, it is impossible to tell "t'other from which"; and it has been deemed advisable to paint numbers on their bows like torpedo boats. Previously to this, any of their crews going ashore had some difficulty in finding their ships again!

On a trial trip, with all weights on board, the Boxer made a mean speed of 29.17 knots in six runs on the measured mile. In the best run of 1 min. 58.6 sec. she made a knot, the speed being 30.3 knots an hour—that is, close on a rate of 35 miles, or more than a thousand yards a minute. On this occasion the starboard engine made 418 revolutions; they have worked up to 425.7 revolutions. She is credited with having attained a sea speed of 26 knots in the naval manœuvres.

The Daring, Bruiser, Decoy, and Ardent are similar vessels; each have three Thornycroft water-tube boilers; the engines have four cylinders, one high-pressure one of 19 in., an intermediate cylinder of 19 in., and two low-pressure ones of 27 in.; the stroke is 16 inches.

For long-distance cruises these vessels get the greatest economy out of a 13-knot speed.

The Dragon is of 4500 horse-power, the same length as the Boxer, but a foot broader. The Northampton, a vessel many times larger, of 7630 tons against 290, has exactly the same amount of horse-power; in this thing, at least, there is a great modern increase!

The Dragon's engines work up to 355 revolutions per minute, the larger ship never worked up to 80; though revolutions, it must be borne in mind, depend on the form of the screw. On her trial trip the Dragon did miles varying from a rate of 24.8 knots to 29.4, and this in bad weather. She proved able to turn a 500-yard circle in 3 minutes, and to go dead astern at 17 knots. She was built and engined by Messrs. Laird of Birkenhead. The principal advance over earlier types consists in the engines being placed amidships in the widest part of the boat—with four boilers forward and the other four aft; a great advantage is also gained by all portions of the propelling machinery being accessible even when the vessel is going at full speed.

[1] The very early steamers had 1 horse-power to 5.17 tons.

[2] The Hasty, a Yarrow boat, is peculiar in that she has two really high funnels.

The growth in size of destroyers is clearly visible by the following table:—

NAME.	Date of Launch.	Horse-power.	Displace-ment.	Dimensions.	Extreme Speed.
				Length. Beam. Draught.	Knots.
HAVOCK .	1893	3500	240	180 × 18½ × 5¼	26.7
BOXER . .	1894	4500	250	200 × 19 × 7⅞	29.1
QUAIL . .	1895	6000	300	213 × 21½ × 5¼	30.4
CHAMOIS .	1896	6265	325	210½ × 20½ × 7	30.3
EXPRESS .	1897	7700	300	227 × 22 × 9	33

At the same time the crew have increased in number from 43 to 65.

The 1897 destroyers are not, of course, yet ready for sea, and few of them have completed all their steam trials, as between launching and completion there is a good deal always to be done.

The following are more minute particulars of some of the "thirty-knotters," the most recently completed boats—completed here being used in the sense of having actually entered into service.

The Birkenhead 30-knot destroyers, designed, built, and engined by Laird Brothers, Birkenhead, 1896 and 1897. Dimensions—213 ft. by 21 ft. 6 in. by 12 feet 9 in.; speed—30 knots; engine-power—6000 horse-power; bunker capacity—90 tons; armament—one 12-pounder quick-firing gun, five 6-pounder quick-firing guns, two 18-inch torpedo tubes, each mounted on pedestal and racers; complement—65 officers and men. Trials—on all full-speed and full-power consumption trials the vessels have carried the full load of 35 tons, to represent the normal weights, in accordance with the British Admiralty Trial Conditions. Radius of action—the consumption trials of 8 hours' duration at 13 knots speed give a radius of action of about 3500 knots, and the consumption at full power is in all cases within 2½ lbs. per i.h.p. per hour.

The engines are of Messrs. Laird's noted vertical tri-compound type; and the boilers, of a modified Normand type, are four in number, fired from two stoke-holds—one forward of the engines and the other aft—a disposition of machinery which has proved successful in reducing vibration to a minimum—a very necessary thing, as vibration interferes heavily with accurate shooting.

The propellers are all three-bladed and of manganese bronze, but the diameter and pitch are slightly varied.

The accommodation provided for officers and men is superior to that provided in torpedo boats, and even that of the most recent 27-knot destroyers. The commander has a cabin distinct from the ward-room, with a separate entrance.

The pumping and flooding arrangements are very complete, and each of the 23 watertight compartments can be readily cleared of water in case of collision or accident.

The ventilation throughout is arranged as far as possible by natural means, but wherever necessary patent ventilators are fitted.

The rudder is of novel form, balanced, and of large size, to ensure rapidity of manœuvring ahead and astern.

In the nature of things, destroyers, in common with all other torpedo craft, are very slightly built; their sides are not so very much thicker than the paper on which the illustrations in this book is printed. There is no attempt made to keep shot out; gun shields are the only protection existing in them, save such

IN CHASE: ON BOARD A DESTROYER

Particulars of the Official Trials of the Birkenhead 30-Knot Destroyers.

Name.	Trial.	Date of Trial.	Press of Steam.	Revs. of Engines on Miles.	Mean Speed on the Measured Mile Base.	Mean Speed for 3 Hours' Continuous Steaming.
					Knots.	Knots.
British Destroyers:						
SPARROWHAWK	Speed	16th October 1896	214	364	30.207	30.56
	Coal consumption	23rd October 1896	217	362	30.02	30.03
VIRAGO	Coal consumption	12th November 1896	218	364	30.162	30.07
	Speed	27th November 1896	217	364	30.365	30.049
QUAIL	Coal consumption	11th December 1896	216	372	30.385	30.039
	Speed	4th January 1897	216	377	30.087	30.1
THRASHER	Coal consumption	14th December 1896	213	362	30.000	30.015
	Speed	13th January 1897	220	364	30.305	30.03

PARTICULARS OF THE OFFICIAL TRIALS OF THE BIRKENHEAD 30-KNOT DESTROYERS.

NAME.	Trial.	Date of Trial.	Press of Steam.	Revs. of Engines on Miles.	Mean Speed on the Measured Mile Base.	Mean Speed for 3 Hours' Continuous Steaming.
CHILIAN DESTROYERS:					Knots.	Knots.
CAPITAN ORELLA .	Speed	30th September 1896 .	215	361	30.172	30.23
CAPITAN MUNOZ GAMERO . .	Speed	15th October 1896 . .	214	369	30.420	30.081
TENIENTE SERRANO	Speed	16th December 1896 .	216	371	30.341	30.252
GUARDIA MARINA RIQUELME . .	Speed	18th December 1896 .	215	362	30.092	30.121

The above vessels were delivered complete, including their armament, which was supplied by the builders, to the representatives of the Government, after satisfactory speed, consumption, gun, and torpedo trials. They gave complete satisfaction as sea-going and sea-keeping vessels on the voyage to Chili.

TORPEDO BOAT OVERHAULED BY A DESTROYER IN A SEA-WAY

as watertight bulkheads confer: they are built for offensive purposes, and offensive purposes only, to do as much harm and sink as many ships as possible before they, too, follow their victims to a watery grave.

A destroyer, leaving Portsmouth harbour, was fouled by a dredger and touched the dockyard wall—a mere touch, yet it sufficed to crumple up her bow-plates as easily as one might crumple up a sheet of paper. She was in no danger of sinking, however, the compartments are too numerous; and it is possible that in war-time it will take a good deal of shooting to destroy them.

However, they are vulnerable to even rifle bullets. An attempt has been made in some destroyers built by Messrs. Yarrow of Poplar for the Argentine Government, to guard against this awful risk to a certain extent. The hull about the machinery space is vertically armoured as a battleship's might be, though of course instead of a foot or two it is a decimal of an inch in thickness. None the less this renders the engine-room hands safe from Maxim and Nordenfelt bullets, against the one-pounder shells, and possibly against three-pounders striking at a great angle. Of course, anything larger may come through and burst; still, a great number of small projectiles are kept out. Naturally the boat has to pay for this; it is less swift than it would otherwise be, but the loss is not much more than 1½ knots. However, in any torpedo action a loss of 1½ knots means a loss of 50 yards every minute, and 50 yards in a torpedo action, the duration of which will be counted by minutes or fractions of a minute, is something. Consequently armoured destroyers are not being built as yet; the Argentine boats remain unique, nor have any other builders attempted anything in the same line. Some projected United States destroyers are, however, to have 2-inch nickel steel armour, but it remains to be proved whether they will be a success.

An armoured torpedo boat, the Kotaka, was built some years ago by Messrs. Yarrow for the Japanese; but it, too, has never been duplicated. This boat led an attack at Wei-hai-wei, but does not seem to have gained or lost by her armour. The really complicating question has to do with the fact that a ship is very unlikely to hit a boat at night at all; the boat acts by surprise. The ship's safety and immunity depend rather upon her being at sea where the boat cannot find her, or so surrounded by destroyers and the like that the attack is never delivered on her. This part of the business will be found more fully treated in a later chapter.

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CHAPTER VI

THE FIRST SEA CRUISE OF DESTROYERS: NAVAL MANŒUVRES, 1894

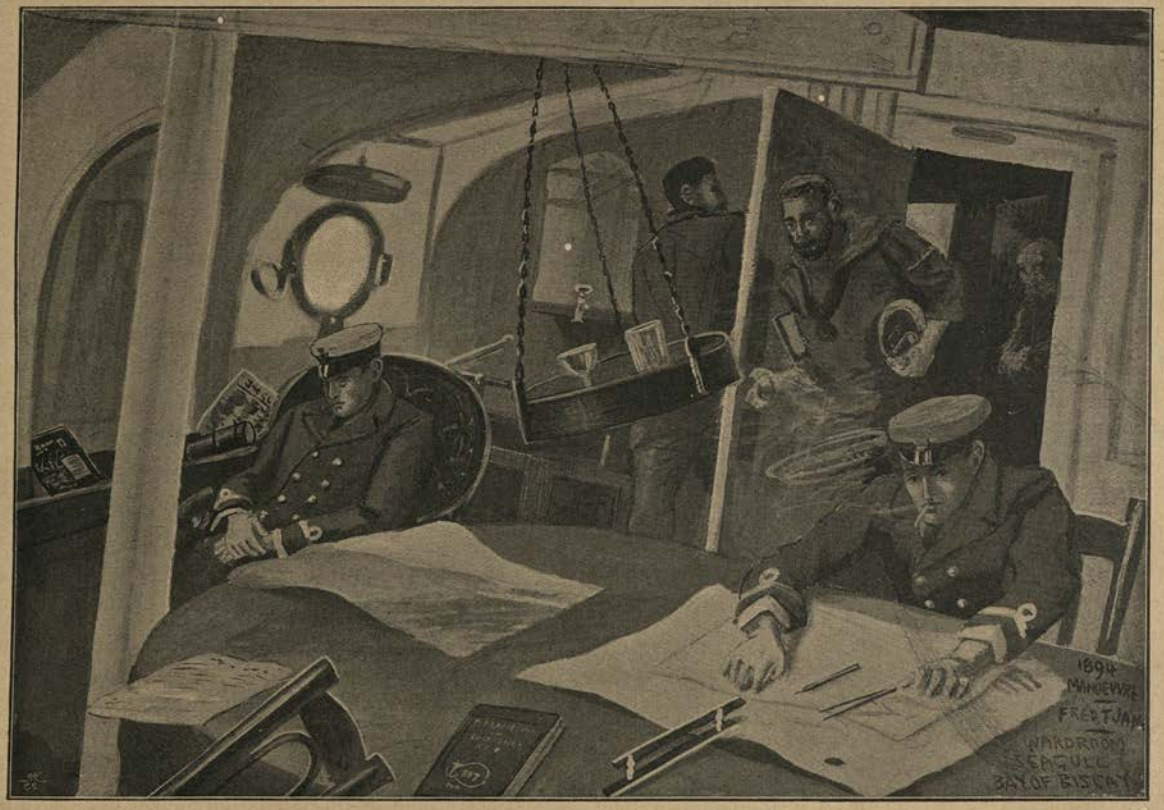
IN the 1894 manœuvres the idea was to test the relative values of destroyers and catchers. The catchers had been much abused on the ground of lack of speed, but it is questionable whether this is such a serious defect in the matter of torpedo-boats hunting as many critics aver; their mission is to lie off the torpedo-boat shelters, and sink the boats as they come out; their comparatively slow speed is dangerous rather on the ground that it exposes them to capture by a hostile cruiser.

This failing in the matter of speed could not be applied to the destroyers; yet there were not wanting indications that in a few years they would have sunk to the level of sea-going torpedo boats, and a fresh batch of even swifter vessels be required. There is no finality in these things; still, they were the fastest boats then afloat, very swift for all that they lacked many of the qualities assigned to them by impressionable and imaginative journalists.

The light squadron attached to the A Red manœuvre fleet consisted of a large number of catchers and the two destroyers; and although circumstances prevented them from much exercise of their own particular rôle, they nevertheless had ample opportunity of testing their sea-going qualities. I chanced to be with these vessels during the cruise of which some record is herein set forth.

Somebody or other discovered that the Red fleets represented English vessels, and the Blue ones French, though whether the Intelligence Department, which drew up the scheme of manœuvres, had any such idea is an open question. However, be that as it may, it was generally accepted to be so; and in pursuance of the idea, Falmouth, where the A Red fleet lay, was put down as Malta; Berehaven, the headquarters of the B Red squadron, was Portsmouth; while the C and D Blue fleets, lying at Queenstown and the Shannon, became French fleets at Toulon and Brest respectively. A and B fleets were equal in value, C was superior, and D inferior to either. A and B combined were superior to the conglomerated C and D. Altogether, the problem was equal to the celebrated "if a hen and a half lay an egg and a half," etc. So much by way of preface.

A Red fleet lay at Falmouth, and contemplated lying there until war should be declared; but such was not the intention of the powers that be. Not from Falmouth were they to dash upon the foe, but from some more or less unknown point in the Bay of Biscay, 100 miles from the base. So one foggy afternoon, in a drizzling misty rain that hid the shore and distant vessels, and



AT SEA: WARD-ROOM, H.M.S. SEAGULL

H.M.S. HORNET

with a cold wind howling right lustily in the offing, the fleet got up anchor and steamed out of the "English Bay of Naples," steamed away in the fog curtain, and Falmouth awoke next morning to find them departed.

No sooner had the fleet got well away, than they of the light squadron, knowing well what lay in the immediate future —and with a view to meeting it in due cheerfulness becoming to British officers—started "selling sweepstakes" as to who would first be victim to Neptune. The bidding in our ship was fast and furious, though the prices fetched varied considerably. I took a certain amount of pride in that the most spirited bidding was for myself, and felt quite proud when knocked down for twenty-five and sixpence. The weather was not very bad just then. The doctor, who was second favourite, fetched seventeen shillings; while our lieutenant-commander was a drug upon the market, no one would speculate on him. My cheerfulness had a depressing effect on my "owner," who became unremitting in his desire to stand me unlimited beer and other luxuries, such as are carefully avoided in such weather by all save the most hardened sailor-man. However, he won the pool before very long, *his* owner just lost it by half a minute, and—well, champagne was much needed on board H.M. torpedo gun-boat Seagull that day.

Still, every evil has its compensations, and we found ours in gazing at the Hornet. Like a big brown[1] corkscrew, that erratic destroyer was making her tortuous progress through the billows; not plunging into or over them like an ordinary ship, but twisting and gyrating round them on her beam-ends, now springing clean out of the water, and anon disappearing altogether from our ken. It speaks volumes for her builders that the ship and engines held together, for the strain must have been terrific; and the same admiration may well be extended to her crew. What a comfort it was to watch them, to be sure, for they were in worse plight than ourselves!

For twenty-four hours we led this storm-tossed existence, buoyed up, in some measure, by the knowledge that through such means is the British sailor made perfect. After all, it is a proud reflection that it is only in the British navy that with small craft such things are done, and that by cheerfully enduring them the men who guard our comfort-loving landlubbers at home learn to rule the waves in very deed and truth. It is inspiriting when one hangs over the lee railings, to watch the ships and say, "*Civis Britanniæ sum.*"

The worst thing about this educational weather is the way in which everything gets into the wrong place. I occupied a corner of the skipper's cabin, and my paints and impedimenta were kept stowed around me; but what with the pitch of the screws and the general war of the elements, they disappeared about nightfall. They had not gone far, for when the skipper rose for the morning watch he was most beautifully tinted from head to foot. He had slept amid the ruins of my oil colours!

When the "declaration of war" time came about, Admiral Fitzroy, the "A" commander, split up his fleet; sending his cruisers and most of the catchers up the English side of the Channel, while the ironclads, with the Speedy, Seagull, Havock, and Hornet as scouts, hugged the Irish shore. Fifteen knots (about seventeen miles an hour) was the speed we went that night, with never a light visible, and every water-tight door closed in case of accidents. A dozen torpedo boats, anxious to "sink" us, scoured the Channel; but we saw nothing

[1] The early destroyers were painted a neutral brown colour, not black as now.

of them; indeed, at the speed we were going they had little prospect of attacking us, unless they had chanced to be lying right in our path.

About breakfast-time the next morning I noted a crowd of bluejackets gazing away to port, and, looking in that direction, found the reason for this excitement—your bluejacket always takes manœuvres very much *au sérieux*. Far off on the horizon were faint pillars of smoke, in the middle distance congregated the whole of our fighting-ships, evidently watching the distant fleet.

On came the distant ironclads, and our battleships turned to meet them, steaming swiftly in single column of line ahead over the dancing sunlit water. As a rule, at sea, one is unconscious of the speed of the ships; but on this occasion we were going dead slow, and so gained the full impressiveness of the Royal Sovereign swooping like a great bird across our course.

Whether the admiral took the distant warships for our other fleet or not, I cannot say; but if he did, he was soon undeceived. They were the combined Blue fleets, and a quarter of an hour later the battle was raging fiercely. Then, far away by Belfast Lough, we saw yet another avenue of smoke-clouds, another line of rushing ironclads; this time our friends coming at full speed to join us.

All this time the Havock had been lying under the flagship's lee, exactly with what object we never discovered. She could not have been waiting for a chance to use torpedoes, as her tubes had been taken out of her, saving a fixed discharger in the bow, which could not very well be used, since the vessel travels nearly as fast as a torpedo. In the Seagull we had a couple of torpedoes ready in the 14-inch tube—torpedoes that those responsible for had taken a mighty oath should smash into the old Alexandra, flag of the enemy, if fate permitted. Unfortunately, it did not permit; which thing was a pity in more ways than one. The one great ambition of every man who has to do with torpedoes is to "sink" the flagship; but apart from all this it would have been interesting to note how the torpedoes fared. Of course, in war-time, all these torpedo craft hanging under cover of the fleet would have been a great trouble to the enemy, and probably destroyed some of his ships; but manœuvres are not war, and the risks of enthusiastic catchers running across the bows of ironclads would be too great. As things were, the rules allowed for torpedo cruisers to use torpedoes only if they came up astern of the foe.

From our station the battle soon resolved itself into little more than a row of ships all round the horizon; though even at this distance we would, in an actual engagement, have had to risk stray shots, so great is the range of modern artillery. As it was, nothing more serious happened than the loss of the first lieutenant's cap, which was carried away in the perturbation caused by a sudden change of course.

The fight over, we put in to Belfast Lough, which is one of the most beautiful places on the face of God's earth. From where the warships swing at anchor, one sees, lying low to the right, the little town of Carrickfergus, a brown tower rising above a foam of soft blue smoke. Away and beyond, right ahead of the anchorage, over a sheen of gold and silver water, is a great hill, a simple mass of purest ultramarine that changes into a crimson mist as the evening light and sundown grow apace. Over land and sky and sea the veil of rosy haze falls down, subduing and softening the glare, even as it caresses the beauty of the sunset gold. And should the weather be rainy or

SCOUTING: AN ALARM!

unsettled, ofttimes there come grey columns of rain standing out against the glory, pillars of a temple not made by hands. On such an evening one can but gaze in silence and with solemn wonder, and in that beholding feel—

"This is the gate of heaven."

All that Sunday and Monday the fleets lay off Carrickfergus, coaling and getting ready for further fighting—for we did not then know that the decision of the umpires had gone against us.

On the Monday night all the big ships got out their crinoline torpedo-net defences, while we of the light squadron stole out in the twilight; some to lie off the torpedo-boat shelters, and seven of us to patrol the mouth of the Lough. Most of the ships also sent out picket-boats, which took up a station between us and the fleet; so the Lough mouth was pretty effectually guarded.

The patrol ground was situated some five miles out, between a wreck and the lighthouse, and here for six mortal hours, with guns loose and steam up for full speed, we cruised up and down in line—the Havock darting along independently. Hardly had we taken station than the fleet with one accord began to burn their search-lights. So long as they kept them still it mattered little; but ere long they began to search, and of course showed us up to any hostile torpedo boats that might have been in the vicinity. It was a black night, and under ordinary circumstances it was difficult to make out our next-ahead, and these search-lights made the task still harder, giving us, as they did, glare alternated with blackest gloom.

Every now and again an alarm would be given by one of the catchers, rockets would go up and search-lights flash around; but, so far as we could make out, these alarms were in every case false ones. The Seagull only gave one, a boat rushing swiftly past us on the starboard quarter, and she turned out eventually to be a small tug. We blazed away merrily enough—one blue-jacket firing off to port, to the great indignation of our captain, who at once sent for the delinquent, and the following conversation ensued:—

"Why did you fire to port when you knew the enemy was to starboard?"

The man said he had been told to fire by the gunner's mate.

"Did you aim at anything?"

"Yes, sir."

"Indeed! what at?"

"Well, sir, I was told not to fire without taking aim, so I waited till I saw something, and then let drive. I think, sir, it was *one of our own ships, though!*"

This is the whole difficulty of scouting in a nutshell. It is impossible to tell friend from foe, and hence it is a moot point whether it is not best to fire at everything that comes within range, and chance its turning out to be a friend; but when all is said and done, it is only a very thin line that divides torpedo-boat hunting from the game of blind man's buff.

Presently the fleet caught the infection, and blazed away right royally for some twenty minutes. A wag next day stated the result as follows:—

Claimed by H.M.S. —— (of the Red Fleet):

Three picket-boats.
One Holyhead and Belfast packet.
Four fishing-smacks.
H.M.S. Rupert (Red Fleet).
Boat conveying admiral's washing.

H.M.S. Hornet (Red Fleet) at anchor, using steam syren.
One flight of birds.
Three houses on shore.
One moon.

I don't think anyone found out whether or no torpedo boats came in that night; it will probably remain a mystery for ever. It is interesting, as showing how impossible it is for self-appointed critics to give any reliable decision about manœuvres from what they see and hear, even though they possess knowledge of the subject—which does not always go without saying. The admiral, who wanted to keel-haul all correspondents who did more than describe events, has much to be said on his side.

Gradually the alarms ceased; and we were patrolling in silence, when of a sudden a strange thing came to pass—our next-ahead disappeared! We had been waiting for her to turn, but she never did, and we saw no more, either of her or the vessels astern, they had one and all evaporated into the darkness; and in this predicament we slowed down, waiting to see what would happen, and thus we passed the time till dawn.

Now we had in the Seagull, as navigating officer, a sub full of zeal, such as the Admiralty should love. He had read of manœuvres in the dailies, and had seen them pictured in the illustrated weeklies, but never till this trip had he taken part in them. Therefore he hailed the occasion with enthusiasm, and though he did not (like me) point out as a torpedo boat a search-light-lit cottage half-way up a big hill, yet he sighted some fifty objects that night as presumably torpedo boats. Just as we were having our daybreak cocoa—what a fine thing a big basin of hot cocoa is when you have been up all night in the cold!—he put us all on the *qui vive* by spotting the whole of the hostile torpedo boats advancing in line, and the skipper had the hardest work in the world to prevent him from firing a rocket and so setting the whole fleet a-banging again. It was just as well that the rocket was not let off, for the growing light showed the supposed enemy to be our missing consorts, who had got quite a couple of miles away from the patrol grounds in the darkness.

We all returned to our billets in the anchorage, but there was not much rest to be had even there, since the ship had to coal, and by the time this was over it was the hour to see about getting ready to go out scouting again. Little wonder, therefore, that when a signalman came in with what we took to be our sailing orders, but which on reading proved to be "Manœuvres concluded," we greeted it with cheers, while the torpedo-boat-detecting sub—enthusiastic for scouting no longer—was so overcome with joy that he bombarded the messman with the ward-room melons.

"I bless that Admiralty," I overheard the messman soliloquise as he made an entry under the sub's name in the day-book. "All of 'em beginning to go, too; good as sixteen shillings clear profit."

Closer inspection of the signal slate showed us that the Red fleets were given as sunk, disabled, captured, and blown up, with little or no loss to the enemy. The two Blue fleets, having a smaller space to traverse, had naturally been able to combine first; they had then overpowered our B fleet and driven it into Belfast Lough, and it was while doing this that they had sighted us.

Our admiral having the swiftest fleet had the option of running or fighting; and since nothing was to be gained by the former course, he naturally opened the battle, knowing that

RETURN FROM THE PATROL-GROUND

our B fleet could not be far away, and with that to help him he outnumbered the enemy. But B fleet having been already severely mauled, was reckoned by the umpires as of small account, and the partially damaged Blue fleets were considered superior to our sound but much inferior A squadron. The matter seems simple enough, but it was provocative of a terrible amount of "what the admiral ought to have done" from many an amateur expert. Being an admiral isn't "all beer and skittles."

However, we in the Seagull were content to let the admiral manage his affairs without our assistance, and considered the time more profitably occupied in making ourselves comfortable —and thereby hangs a tale. Our navigator, whose enthusiasm in the matter of torpedo boats has already been noted, accepted an invitation to dinner from the gunroom mess of one of the battleships. Then he recollected that he had left his dress things behind him—one doesn't dress for dinner in a catcher. In this predicament he appealed to the skipper, who, anxious possibly not to again throw cold water on his energy, lent him an old mess jacket of his own. It was a bit the worse for wear, and two sizes too small, but this was more than compensated for by the two and a half stripes that adorned it; and, thus arrayed, our sub was rowed across the mile or so of water between us and the ironclad.

"Captain of the Seagull coming aboard, sir," reported the quartermaster of the big ship, and the side was manned to receive our sub.

He was cold and wet when he got on board the strange vessel, took little heed of whither he was being led, and before he knew it found himself ushered into the presence of the admiral.

"Young-looking skipper, very," soliloquised the great man, as he cordially greeted our sub.

"What orders did you have last night?" he inquired.

"Charts in readiness at one bell first watch; cocoa for three at six bells, middle watch; pull the rocket string if required, and not light a pipe except under cover," vaguely replied our sub, wondering at his curiosity.

The admiral sat up straight and stared at him.

"Brain touched from overwork, I expect, poor fellow," he said to himself; then to change the subject he added aloud—

"How are your accounts?"

"Infernally inquisitive old boy," thought our sub, as he replied that he expected to have ten pounds—less sixteen shillings for some melons—to spare when the ship got back to port.

"Ahem," said the great man, concealing a smile, "I referred to the ship's accounts, not your private purse, Captain"—

Suddenly it dawned upon our sub that his borrowed uniform had got him into a very tight place; but as to how and in what manner he got out of it, he vouchsafed us no information.

Next day the fleet weighed anchor and steamed away homeward bound; and a little later the Seagull and Havock went off on an independent cruise. Target practice was to be carried out *en route*, but the weather was too bad for it until we had passed the Lizard. Off Falmouth the Seagull dropped a target, which the two vessels proceeded to demolish with shot and shell in sufficiently uneventful fashion. We did not even have the young seaman gunner who asks, "Shall I take the tompion out before we fire her?" nor did the usual coaster seek to sail between us and the target.

The Seagull carries a couple of the new 4·7 quick-fire

guns—the same sort of weapon that stood the Japanese in such good stead at Yalu—ear-splitting guns that can discharge ten to twelve 40-pound shell per minute—while two men can manage them if necessary. The Seagull is quite a small ship—only some 735 tons displacement—yet from her six guns she can discharge sixty aimed shots per minute.

A curious feature of these 4.7 guns is the noise of them. When a big gun is fired, you feel as though some one had hit your head a good straight-from-the-shoulder blow with a boxing glove, and hear but little: with these small 40-pounders, the effect of the detonation is like having a sharp instrument driven into the brain through the ear; it is absolutely painful.

Practice over, we picked up what was left of the target, and continued our homeward way. That night we passed through a large fishing-fleet—a regular floating city—and the next morning saw us past the Needles and going into the Solent. On we steamed, past the low fir-clad shores, past Cowes with its yachts and warships—the hideous Hohenzollern, with the Kaiser Wilhelm on board, was there for the yachting week—past Stokes Bay and its torpedo targets, past Spithead with its chessboard forts. Here the Havock anchored, but the Seagull kept on up the harbour to her buoy, welcomed by crowds on shore, waving to and cheering the first ship back from the manœuvres.

H.M.S. HAVOCK IN A GALE

CHAPTER VII

ON BOARD A TORPEDO BOAT DURING AN ATTACK

"OUR scuppers to-night will run with gore," cried one acting sub-lieutenant to another, thereby conveying the information that the boats were going "out" that evening.

"Good biz!" returned his neighbour. Then he fell again to conversation with a man who had come alongside in a shore-boat, a reporter from some local paper, who had been rash enough to visit headquarters in order to acquire information about the torpedo flotilla.

The subs in command of torpedo boats are young and merry, torpedo-boat knowledge does not enter into the curriculum of provincial newspaper reporters; and thus the local public learnt many strange things not generally known concerning the twenty-one mysterious little black boats that lay side by side, hitched on to the depôt-ship Hecla in Belfast Lough.

"Gore?" inquired the local reporter. "That's a joke, isn't it?"

"Wish it were," replied the interviewed one,—"wish it were. Don't say I told you, but lots of captains get so mad at being torpedoed that they fire ball at us! It's a shame, you know; but they're our seniors, and sometimes they shoot straight. Well, there—have another whisky and soda? Mine is the only really decent ship in the fleet. I have to give a tow-rope to most of the others."

"Look here," said the reporter, "this is the sixth steamer I've heard that on!"

"Daresay," returned the other calmly, as he let himself down through the little circular hole that serves as a hatchway in torpedo boats; "they're awful liars. . . . See, I keep the revolvers here in the cabin in case the crew mutiny."

I heard no more of the conversation, but I believe the greater part of it appeared in a local newspaper the next day. Why not? It was the old, old story of the sailor who was proved truthful when he spoke of having hitched up one of Pharaoh's chariot wheels in the Red Sea, but who was called a liar when, his imagination being exhausted, he told how fishes sometimes flew in the air. Only in this case there is the absence of any cyclopædia to serve as the reporter's excuse.

We, the Blue fleet, were lying in Belfast Lough, half a dozen slow-steaming old battleships and a score of torpedo boats, with a "mine-field" between us and the enemy. Outside our cruisers still patrolled; but beyond, slowly forcing them back, lay a larger force of hostile cruisers, behind which again were two great fleets of battleships coming nearer and nearer

CAUGHT BY THE SEARCH-LIGHT

as they moved to form a junction. One of these fleets, so a cruiser of ours ran in to tell, was nearing Luce Bay, and there it would be our duty to torpedo it—if we could. That we were all anxious to do so goes without saying, and, in addition to the usual alluring prospect of being able to "bag the flagship," there was the chance of being able to torpedo Prince George, who was out that year as captain of the cruiser Melampus: and as, if the Prince were "bagged," there would be long reports of it in every newspaper in the land, an attack upon the Melampus seemed likely to confer fame upon the assailing boat, and to hand her number down to the memory of posterity.

The upshot of the affair was that a great sweepstake was organised in our division, for the due performance of which all those interested repaired to the cabin of No. 74, and drew lots to settle which boat should "bag" Admiral Fairfax in the Royal Sovereign (Royal Quid is her more euphonistic naval name), and which the Melampus and Prince George. No. 41 secured the Prince, and we looked upon His Royal Highness as being as good as sunk already. But "there is many a slip," etc., as the proverb has it, and the counting of chickens before they are hatched is often the subject of disappointment later.

So soon as the news that we were to go out got bruited abroad, there was excitement in the fleet and much perturbation, particularly in our "opposite number," which had been rather mauled in some recent rough weather, and had had her ensign-staff much twisted in the mauling. To jibe at this ensign-staff was a stock recreation amongst the other torpedo-men, and the skipper who owned the staff was so mad thereat, that no

sooner had he hauled out into the bay than, calling some hands aft, he set them to work to try and straighten it. The operation was an interesting one for the onlookers, but its utility ended there, for No. 74 went out that night with an ensign-staff like the letter S to look at. We were glad to see her flag come down at sunset, for it hung miserably at the upper part of that S.

The torpedo boats were subdivided into five groups: ours consisted of No. 65, the leader, Nos. 27, 74, and our own boat, old 41. When the dusk began to thicken, we started out of the Lough in single column of line ahead, a cruiser following some distance astern to keep an eye upon and protect us if need be. It was a beautiful night, the glassy water, reflecting the dying colours of the sunset, lit here and there by the phosphorescent little waves that we made as we steamed slowly out. There was plenty of time, and there was danger outside if we appeared before the night was dark enough to hide us.

On the mine-field we encountered a picket-boat, the lieutenant in command of which, having been stationed on that lonely spot for some days, and exhausted his picnic-hamper long since, gave us no blessing as we set him a-rolling with the wash of our screws. He was just off the fair-way, and all torpedo boats going in or out made it a point of honour to set him rolling; but he never got used to it!

However, we were soon out of earshot, past the guardian cruisers at the entrance, and out into the open sea. Here, when it had grown dark, we presently put on speed, and soon we were bowling along at sixteen knots—a rate which took it out of our attendant big ship.

Some half an hour later, we had an alarm. Away upon the starboard bow, forming a line upon the horizon, we made out three series of lights, which, from the regular distance that they preserved to each other, could only mean one thing—warships!

"Man and arm ship!" cried our skipper; and soon some of the bluejackets were standing round the Nordenfelts, others with rifles under such cover as they could find; while the sub and the gunner sat astride upon the torpedo tubes, this being the most convenient position in which to fire them. A moment later, we saw No. 65 turn to starboard, and, following, we all headed for the ships, decreasing our speed so that they should not "spot" our bow waves or the dull red flames which at critical moments are apt to spout out of torpedo-boat funnels. The signals for all this were made to us by whistles, which lend themselves very well to the Morse code or to a simpler series of long and short sounds specially arranged beforehand. The usual night signals with lantern flashes were, of course, impossible, as they would have betrayed our whereabouts immediately.

It was an exciting moment; the quarry seemed quite unaware of our existence. We were speculating upon "bagging" the three, when suddenly the Arethusa (our cruiser) began to fire and send up rockets. To this in our boat we paid little heed, taking it to be but a ruse to attract the enemy's attention, and we were quite astonished to see No. 65 suddenly show lights and begin to signal to the ships upon which we were steaming. A moment later, we were among them, three cruisers lying in a sort of circle, and with all their ports open, flooding the gloom with light, they looked like some weird, mysterious city of the sea—a new Venice, as it were, into which we, black and evil-looking, floated, the pioneers of discovery, the conquerors of a new world. Fancy has wings on a dreamy sea.

We fired no torpedoes; in that last moment we had been

"OF WHAT WILL HAPPEN IN THE NEXT WAR"

told, what our leader had just learnt, that the ships we were going to torpedo *were our own cruisers*.

None of our flotilla even knew that any Blue cruisers were out in the Channel, and but for the Arethusa there is no doubt that we should have "sunk" them, as they were quite unaware of our propinquity, and, indeed, knowing that the few torpedo boats of the Red side were far away at Milford, kept no look-out for such craft, so that they had a narrow escape. It was an illustration of what happens often enough in manœuvres, of what will form a terrible problem in war-time, how either ship or torpedo boat is to distinguish friend from foe. The problem is recognised, its difficulties have been much discussed, but no satisfactory solution has ever been reached. A torpedo boat *must* act by surprise, by stealth; she throws away her chance if she waits to ascertain; to be seen many seconds before the psychological moment means destruction. So, too, a vessel will not dare to hesitate, for hesitating she will be lost. It is but too probable that the only possible course in the next war will be for ships to sink all torpedo boats at sight, regardless of their nationality. Safety lies in no other course, and our torpedo officers themselves advocate it as the only way. But it is a gruesome thing to think about, and it is fortunate that one is saved this problem in mimic war.

After hearing the latest news of the enemy, we made off again, steaming swiftly towards a very bright light that had for some time been visible upon the horizon—the lighthouse

near the entrance to Luce Bay. It was sleepy work, the monotonous thud of the screw, the whispered orders, the soft creak of the steering-wheel, the softer swish of the waters parted by our stem, all predisposed to rest and slumber. To me, an idle onlooker with nothing to do, this soporific influence of things was particularly powerful; only hard smoking kept me awake. The great charm of a torpedo boat is that anyone may smoke when and where he will, though, of course, when going into action precautions have to be observed, not merely over the matter of hiding the igniting match, but even to concealing the glow. A very little light shows a long way at sea, and one's hands have to do duty as pipe-covers.

There was a moon nearly full, but it was obscured by little clouds which flecked the sky all over, so that everything was favourable to our enterprise; it was, in fact, almost an ideal night for an attack—smooth water, some haze, and a moon that, even if it shone, helped to hide us, as its rays fell full upon our boats, and a boat coming down against the moon is most difficult to detect.

We were going along in this fashion, the bay being yet some distance off, when we heard indistinct shouting on board the leading boat, and she swerved suddenly in her course. A moment later, two black objects appeared ahead, looking for all the world like a couple of huge dogs racing towards us. They increased in volume almost instantaneously, and well they might, for we were all travelling at topmost speed, approaching each other at a combined rate of over forty miles an hour!

Exactly what happened next it is impossible to tell: one cannot give the sequence of events that occur as swiftly as the dart of a flash of lightning from one part of heaven to another. For ourselves, the third boat in the line, we seemed to be suddenly lifted out of the water and away from the world, and to float for a moment across the dazzling corona of the sun. The enemy were turning their search-lights upon us. Everything in the shadow of the light disappeared; bathed in that blinding, palpitating glare, there was nothing tangible left save what was touched by omnipotent blaze.

Our funnel vomited sparks and red-tongued flame; there was a sound of banging, guns and rifles firing quick and fast. Our little ship trembled and quivered; the sea spray dashed over us. Some of it fell against the funnel, hissing angrily as it did so, going off in little jets of steam. All around us night, a blank of darkness.

Then, for one instant, we saw a picture. The brain-piercing search-light wavered and fell slanting-wise across us, and in that moment I saw two dark catchers, astern of us now. Across their bows one of our torpedo boats was going at full speed, another passing close to her in the opposite direction, and far and near the flash of rifle and the livid tongue of flame from Hotchkiss guns and Nordenfelts, all in glowing, ever-changing colours, colours such as I can only liken to the scenes that we have fancied in our childhood, when we have run swiftly, and hoped to stand beneath the base of a rainbow in a field beyond. It was all this, and more than this, for in that brief vision the wildest pictures of Dante's "Inferno" were unveiled to our eyes in a moment of time.

Then darkness, utter, impenetrable, blank, and absolute—such a darkness as might fall if the sun went out, and the moon and stars all died.

This darkness, too, was brief; and as it dissipated we found ourselves close alongside one of the catchers. Her crew were not firing in our direction; they were all blazing away at one

of our boats upon the other side. We gave them a volley to distract their attention, and, from the howl that went up, obtained conclusive evidence that wads of blank ammunition hurt at close range. We were passing them at a fair rate of speed, but ere we had quite cleared, some of them opened upon us and swept our decks with wads, even as we had swept theirs —a painful enough ordeal while it lasted.

Then the view dissolved again into a long white curling smoke-billow, dragging out astern, wreathing fantastically in the search-lights; we were retreating, hard as we could pelt, on either side of us a boat, all dashing madly for the safety of Belfast Lough.

It was light enough now; not with the silver and violet glow of the search-lights, but with a coarser crimson glare that lit the sea all round us and made it look like blood: a great pillar of fire swept out of our funnel, and enveloped all around with a thunder-shower of gold and scarlet sparks. I placed my hand carelessly against the uptake at this moment, and drew it back with a yell, the skin seared and blistered—the funnel was red-hot!

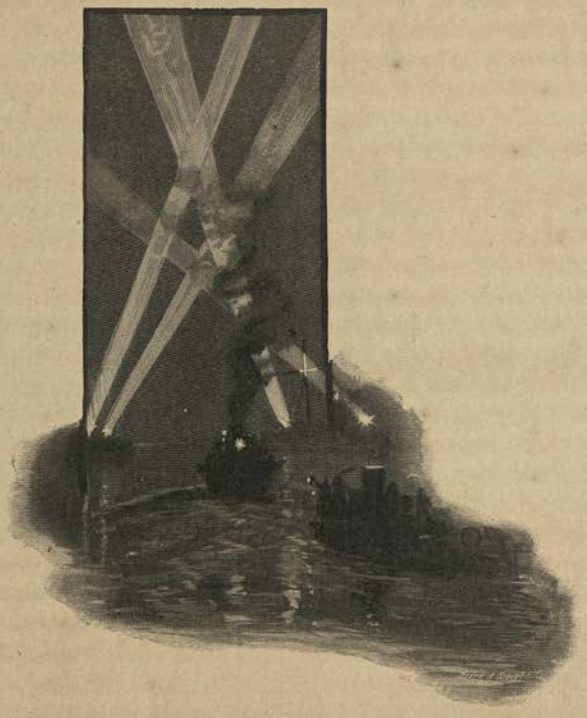
We soon distanced our pursuers, and began to grow light-hearted again, and to curse the leader of our division for still running away in this fashion. We cheered ironically, and waved our hands when a catcher's search-light fell upon us, fainter now, and growing fainter yet as the moments sped, and we left her more and more astern. She sent up rockets, one, two, three, and we laughed as we saw them—but we laughed too soon.

THE RETREAT

ON BOARD NO. 41: UNDER THE SEARCH-LIGHT

ON BOARD A TORPEDO BOAT DURING AN ATTACK

No sooner had the last rocket died away, than the whole circle of the horizon lit up, and we found a bevy of hostile catchers through which we must break for safety. There was firing, too; our cruisers were "having a look in," and so, somehow, we slipped safely through into the dark and silent sea beyond, to where, still far away, we could see a great St. Andrew's cross of light streaming upward into the sky. This was Belfast Lough; the lights, the lights of the guardian cruisers



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turned upward so that our torpedo boats might pass unseen through the tunnel of shadow below.

To these we made the private signal with coloured signal-lanterns, but they regarded us with much suspicion; we were made to come alongside and be personally inspected before they would allow us to proceed up to the anchorage; and even when we had satisfied them, all our troubles were not over. We were going on up the Lough leisurely enough, when we heard a far-off hailing, to which we paid no heed, and soon the water was black with boats closing in upon us; all the boats of the fleet lay on the mine-field that night, and nothing but our immediate surrender saved us from "annihilation" at the hands of our friends.

At last we were safely anchored by the Hecla, and made out the form of our leader, who had taken us away just as there seemed a chance of circling back and slipping among the hostile fleet. As we looked we started: the boat had a curly ensign-staff—it was not No. 65 at all! There was wrath and anger after that.

Later, it transpired that No. 74 had been captured and was merely proceeding home at full speed, on the principle of "the sooner it's over the sooner to sleep," and we, seeing him with a stern light out, had taken it for granted that he was our senior ship. It was No. 65 who had run across the bows of the on-coming catchers, and, being thus lost by them, had gone on with the attack, till, turned aside by a catcher, he had run for Carlingford Lough, whence he hoped to continue operations on another day.

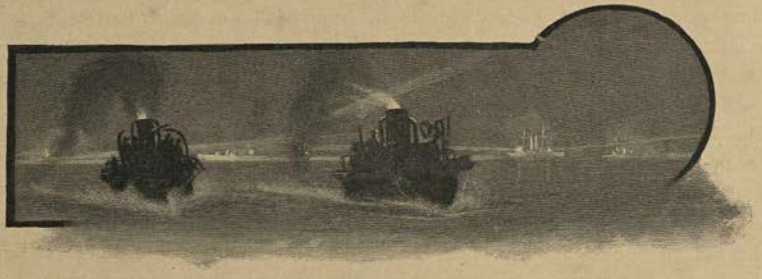
Of all that we knew little then, as we donned our "lammey" suits—a kind of Esquimaux clothing, that, on top of one's ordinary clothes, serves as pyjamas in torpedo craft—and went to sleep on the narrow cushions of the ward-room cabin.

Thoroughly tired out, I was soon sound asleep, and when I woke found that dawn was just breaking, and that, in company with some strange "eighty class" boats, we were in a dock at Belfast, whither we had been sent during the night. Our sub told me that my snores had kept the captain of the Hecla awake, and hence our despatch to this spot; but before he had finished his explanation, a woman looked over the side of a collier against which we lay, and asked whether we knew that a cruiser was coming up the river to capture us. Thereat there was some alarm, especially when the report spread that our fleet had been surprised and captured in the night, so we trained our torpedo tubes upon the entrance to the dock, manned our guns, and prepared to "fall, fighting to the last." There were a good many baulks of timber floating in the dock, and over them we sent bluejackets with orders to cover the entrance with their rifles. And thus in the chill, foggy dawn we waited.

Torpedo-men, who find a wealth of realism in their manœuvre operations, are all enthusiastic, and, the rules being never in their favour, they have to fight hard to make any headway at all, so that over this morning's alarm there was a reality such as one could never find in a big ship. Every detail was attended to as it would have been in war-time, as we waited in this miserable twilight, hearts heavy as lead at the prospect of capture before we had had a chance anywhere, and "peace" before our "out of action" time should have expired. It was with genuine joy that we hailed the return of a lieutenant, who, having gone down to the shore to reconnoitre, came back with the news that the supposed cruiser was nothing but a tug coming up harbour!

About midday we steamed down to the anchorage off Carrickfergus, and, boarding the Hecla, strove with many baths to remove a few of the traces of our expedition. It was a strange sight to see the great ward-room of the Hecla, her own natty officers strolling about, and here and there between them gaunt, black-faced torpedo-boat officers, with worn and shabby coats, burnt in holes here and there where sparks had fallen upon them, neckerchiefs twisted round their throats in lieu of collars, and old white breeches finished off with sea-boots. This is the working uniform of officers in command of H.M. torpedo boats.

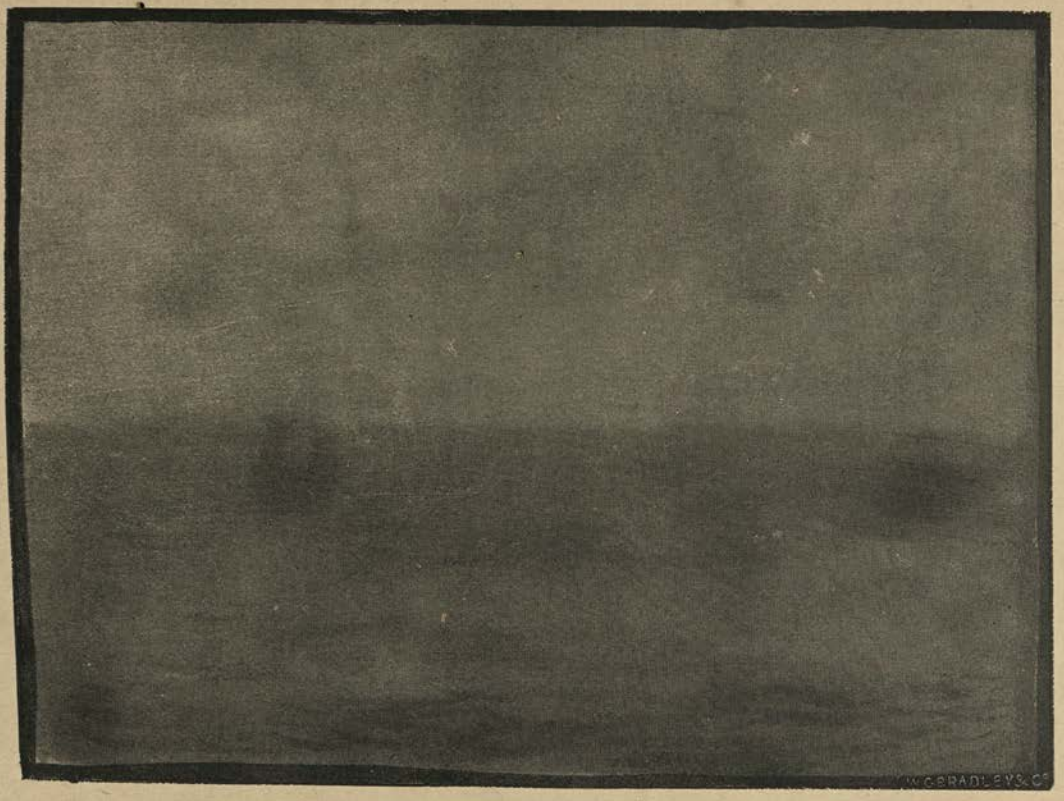
And here, in the floating home of torpedoes, we learnt that Lieutenant Sturdee—who was the "Commodore" of the torpedo flotilla that year—had managed to get into Luce Bay while the guardian catchers were harrying us, and had torpedoed a couple of vessels, one of which was taken to be the Melampus. It was a great blow to our sweepstake arrangements to hear this: however, later, after the end of the "war," we found that the



THROUGH THE CORDON

cruiser torpedoed was not the Melampus at all, but some sister ship, and that Prince George, safe and sound, still carried on in the Channel outside.

Just as our division got over the first shock of hearing how others had captured our plum, grievous news came in from outside. The enemy were off the Lough in overwhelming force; the destruction of the mine-field under their guns would be merely a matter of hours. Blue fleet was cooped up like a rat in a trap. It went to the bottom (theoretically) the next morning, with colours flying and fighting to the last; but the torpedo boats did not share in the general holocaust of the big ships. Space does not permit for a detailed account of that last wild rush for freedom, when, bursting out of the Lough in the night darkness, the Blue torpedo boats got through the encircling hostile fleets, and in storm and tempest, with a rising sea and a falling glass, an angry wind and a bad lee-shore, gained the freedom of the open sea. Their port was captured, their parent ship was "sunk," most of their protectors had met with a like fate, but they and three cruisers still scoured the seas, unconquered and unsubdued, and they were still at large when the "Manœuvres concluded" signal flew from the peaks of the flagships.



TORPEDO BOATS COMING DOWN AGAINST THE MOON

TORPEDO BOAT JUMPING A BOOM

CHAPTER VIII

SUBMARINE MINES, BOOMS, ETC.

INDIRECTLY connected with torpedo craft are submarine mines, countermines, booms, and so forth. With the laying of elaborate systems of mines the navy has comparatively little to do—that is in the hands of the engineers—but since it may be necessary for a fleet to protect itself by these means, a knowledge of mining enters into the multifarious list of things that a torpedo lieutenant must know.

Mines may be broadly divided into two kinds—those that are exploded at will, and those that explode themselves when any ship touches them. The former, which are already laid in nearly every important harbour in the world, are worked upon a system with which most people are now familiar. On the field of a camera obscura the radius of explosion is marked: when a ship passes over this spot, the mine is electrically exploded by pressing a firing key. In theory such mines should be absolutely certain in their effects; but save perhaps for the case of the Maine, there is as yet no record of success. At Manila, two observation mines are said to have been exploded on either side just ahead of the Olympia. It is, of course, presumable that so few mines existed that the ship just happened to pass across a safe channel beyond the radius of damage; it is equally possible that a third mine immediately under the ship failed to explode. But it is far more likely that excitement on the part of the operator led to a premature explosion, and this may be looked for frequently in actual war: no matter how theoretically infallible the machine may be, the controlling personal element is always subject to error. There is, of course, another possibility: these mines may be mythical, like so many incidents of the Hispano-American conflict!

To the recent Maine disaster, which is generally attributed to a mine, it is unnecessary to refer at length. The ironclad lay in Havana harbour in the evening. Suddenly and without warning there was a violent explosion, that literally tore the fore part of the ship to pieces. A second explosion followed; the ship burst into flames, and amid a salvo of exploding magazines and bursting boilers she went to the bottom with the greater part of her crew. *Who* did the deed is, and probably ever will be, a matter of uncertainty. It is quite possible that it was a pure accident, though the evidence is against it. If the mine was an observation mine, it could hardly have been an accidental affair; but there is nothing absolutely improbable in the Spaniards having electro-contact mines moored in the harbour. One could hardly credit the idea were any other nation, unless it might be the Chinese, concerned; but the Spaniards are notoriously careless people. It is conceivable enough that such a mine should break loose; incidents of that

sort have been known before. Then, if it struck the ship, disaster would follow. But, when all is said and done, this is giving the Spaniards the benefit of a very wild hypothesis; the fairly evident proof of the mine's having exploded directly under the ship points as clearly as may be to an observation mine fired with deliberate intent.

The chief concern of the navy with mines is their destruction. This is brought about in various ways, the principal being the explosion of other mines—countermines—on the hostile mine-field. Other methods are creeping or groping for the cables with grapnels. Once found, the cable can be hauled up and cut, thus rendering the mine useless.

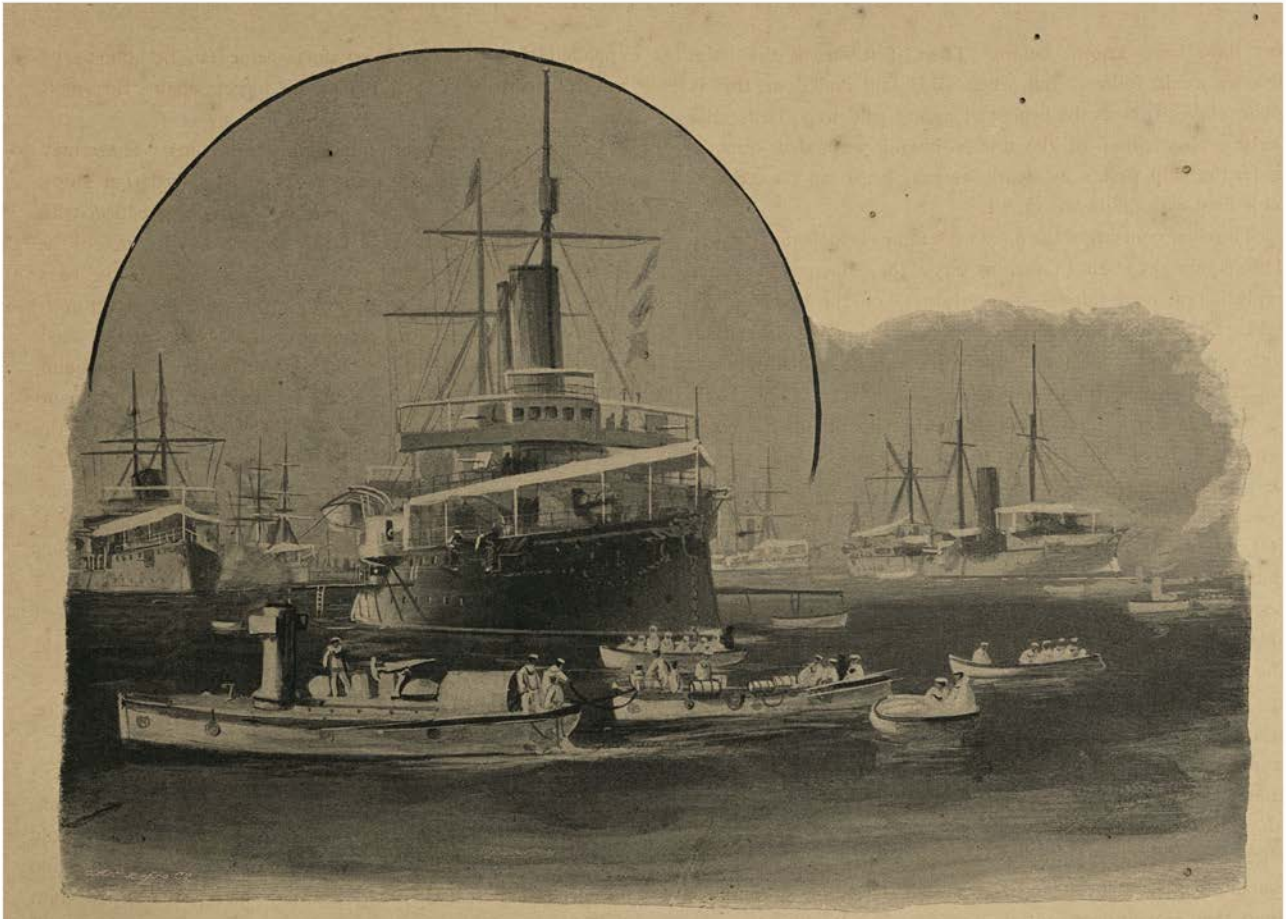
Since, however, it may be assumed that any enemy would protect his mine-field with guns, in which case creeping would be practically impossible, countermining may be taken as the general answer. Under fire this is done by a tug or other steamer towing a countermining launch over the supposed mine-field. The mines are dropped, and directly the boat is beyond the radius of upheaval, electrically exploded. The shock of the explosion sets off all mines within its radius, and the channel is then clear.

In war-time these counter-mines might, and very possibly would, be exploded at the end of booms projecting from an ironclad's bow. A still more general probability is, however, that ships would leave a place known to be mined severely alone, unless it were absolutely necessary, or else possible to silence the guns. Well-placed guns are practically safe against warships, except by an expenditure of far more ammunition than they can afford: unless a gun is actually hit, the harm done is very slight. The bombardments of Santiago by the American fleet did very little harm in comparison to the energy expended, that is to say, every fort seemed to be able to be "totally destroyed" yet ready to forget again the next day.

In close connection with mine-fields are booms. These may be intended to keep out torpedo boats, or possibly larger ships. The main idea is always the same: a floating obstruction with hawsers stretched above and below as well as wire to foul the screws of a charging-ship. A good many booms have been experimented with at Portsmouth and elsewhere, and till quite recently none able to keep out torpedo boats had been devised. With her bow fitted with a wooden angle, a torpedo boat going full speed has generally been able to leap the obstruction, and luck has usually attended her in the matter of escaping the various wires, hooks, and other devices designed to either capsize her, foul her screws, or make holes in the bottom. Experimental trips of this sort are not without danger: it is customary for the Admiralty to heavily insure the lives of all those engaged on board the jumping boat.

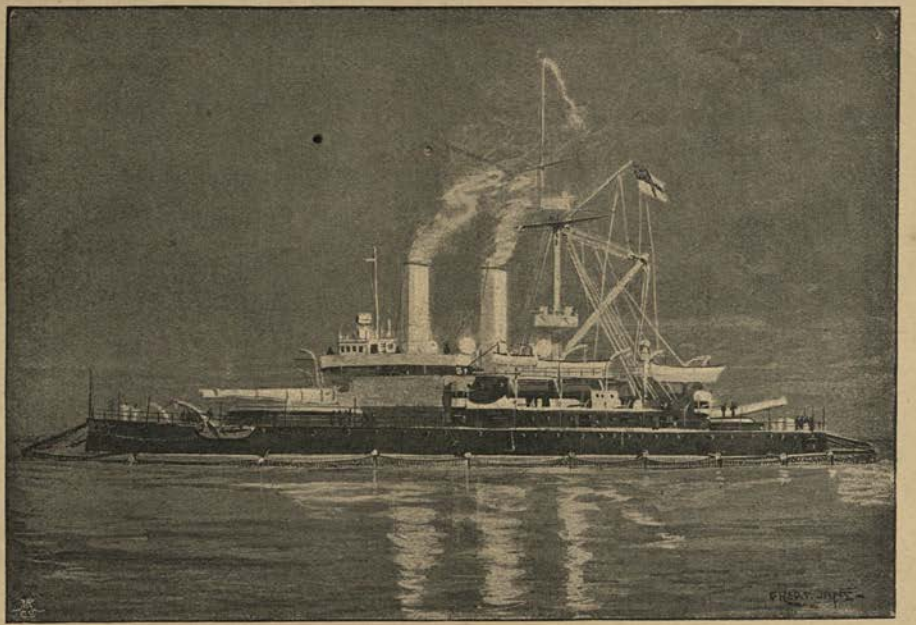
The latest form of boom adopted is more or less proof against torpedo boats; and what can be done in peace could not necessarily be accomplished in war: there is a limit in experiments to the amount of "devilish devices" that can be fitted; in war there would be none.

The boom that could keep out a ship that meant to get through has yet to be invented. The energy of a charging ironclad is very nearly irresistible. In theory the charger would be likely to hurt herself considerably, but experiments do not altogether bear this out. Some years ago the torpedo-ram Polyphemus charged a boom in Bantry Bay, and simply cut it apart as though she were a knife—no visible resistance being offered, and no harm whatever done to the ship.



MINING LAUNCHES

BATTLE ON A MINE FIELD



H.M.S. COLLINGWOD WITH NET DEFENCE DOWN

CHAPTER IX

DEFENCE AGAINST TORPEDO CRAFT

IN addition to booms and so forth, there are certain other means of defence adopted by ships against torpedo craft. Chief of these is the crinoline net defence. It is objectionable, in that a ship can barely move when thus protected, but it is safe. A year ago it was not so: torpedoes were fitted with net cutters that could shear their way through any net, and many nations, France and Germany in particular, abolished the crinoline altogether. We retained it, but probably only because "Out torpedo nets" is a good drill and evolution. Now, however, a new type of net with a fine mesh, called *the Gromet*, has been adopted, and this is proof against all cutting appliances.

Nets, as most people are aware, are slung upon booms, fixed all round the ship at the water-line. These project at right angles, flush with the water or nearly so. The nets hanging from them go down to a depth of twenty to twenty-five feet.

Another defence, or at any rate what in the popular idea constitutes a defence, is the search-light. Much of the fault lies, perhaps, with the name, since searching for boats with the light is a piece of insanity that no captain would be likely to attempt in war-time. The use of a search-light is only to place upon a boat after it has been detected by the naked eye; and even this is dangerous, because the light not only may attract other boats, but its deep shadows afford them a lurking-ground under cover of which they can attack with something like impunity. Many officers would prefer to use no light at all.

The name "search-light" has a good deal to answer for. Rudyard Kipling is one of its victims; in his recent poem, "The Destroyers," the graphic description of the big ships flashing their search-lights seeking for torpedo craft is technically ridiculous. A poet, however, is not to be tied down by facts, even if—as some aver—facts are not the antithesis of poetry. Else Kipling had never called destroyers the "Choosers of the Slain." It is a grand-sounding expression, but happens to be just what destroyers are not: attacking torpedo craft can never differentiate between ship and ship; fishing-boats, and even bits of coast, have often been fired at by mistake for battleships. The real poetry and romance of destroyers lies in some of their most prosaic uses.

Means of defence, other than the weirdly picturesque search-lights, picket-boats, catchers, and destroyers, have already been touched on in previous chapters. So, too, has the one best defence of all—the only sound one, indeed. That is, cruising well out at sea, where the boats cannot find the quarry, and where, even should any chance to, the speed of the ships is too great to give the boats more than a very off chance.

CHAPTER X

TRAINING FOR WAR

FOREGOING chapters have dealt pretty fully with our naval manœuvres. The war training of our torpedo boats —especially in view of the fact that the rules governing their operations in manœuvres are decidedly unfair—cannot be called extensive. Such as it is, it is very good for the boats, in the matter of getting a turn at work very similar to the work they would get in war; it is the big ships who chiefly suffer from the unreal conditions of torpedo attack.

Two or three weeks in the year is not a long training for torpedo boats — nothing like the continual attacks practised in the French navy. We, however, do not, and never shall, rely upon our torpedo boats to greatly affect a war in which we may be engaged; the torpedo boat is the weapon of the weaker power, and our energies will be more taken up with destroying hostile boats than in using such boats as we have to annoy the enemy.

The training of our destroyers—craft that are still a dark horse in the warfare of the future[1]—is a great deal more ample.

Destroyers exercise firing at moving targets. They do not do so very often; but a year or two since a target was towed astern of a cruiser going at full speed, after which the destroyers, also at full speed, steamed, firing as they came. This reproduced very nearly the target they would have in war time—a runaway torpedo boat. Despite the vibration, pretty good shooting was made. In actual war, the firing would most probably be at night or in the dawn, but the risks of night practice on these lines would be almost too great to justify such experiments.

On this particular occasion the torpedo boats also got some "war shooting," steaming a little more slowly than the cruiser,

[1] The Hispano-American War, in progress at the time of writing, has so far produced no results at all. But no results that it may produce are likely to be held conclusive.

A CRUISER SHOWN UP BY SEARCH-LIGHT BEYOND HER

DESTROYERS AT TARGET PRACTICE

A SCHEME FOR MAKING DESTROYERS DIFFICULT TO AIM AT

so that instead of chasing the target, the target chased them.

Practice of this sort is, of course, very different to the usual "tube cannon" practice at towed targets continually being carried out by ships under way, as in this latter case the distance between the ships being constant, there is no alteration of range.

When all is said and done, however, shooting under "war conditions" is almost as non-existent at sea as on shore.

In this connection it may be mentioned, that a year or so ago a scheme for making destroyers still harder to shoot at than they normally are was suggested. The idea was to paint them with irregular dabs of white, blue, green, grey, and purple, so that it would be exceedingly hard to detect them at any distance in the daylight—or, if detected, to aim. Nothing apparently has come of the idea, probably on the grounds that most of the firing at them will be at night, and "at night all cats are grey."

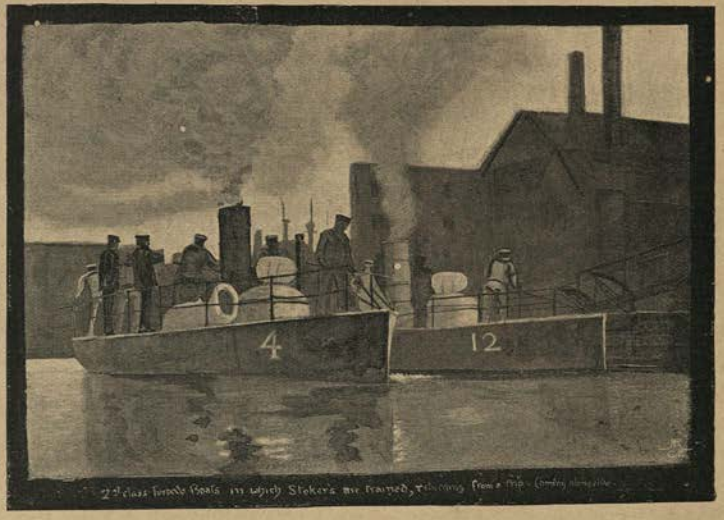
Our "instructional flotillas" are always up and down the Channel, entering and learning all our harbours with their tortuous channels and tricky soundings. Of the excellence of this training too much cannot be said. It produces that thing so little talked of nowadays—so little heard of, indeed, that one is prone to suspect that people generally labour under the idea that it is no longer required — seamanship. For work with destroyers, seamanship is of the utmost importance. Indirectly, in so far as it produces the capability to decide at once what is the right thing to do in an emergency, it is of importance everywhere, and the practice given to our young officers in handling destroyers will tell heavily in the future. It is a great thing, this new training.

For training in actual torpedo firing, torpedo gun-boats are employed as school ships, going out of Portsmouth or Devonport several days a week with a party of seamen learning torpedo. The target is a small one, the torpedoes are usually more or less old ones, but excellent shooting is generally made. The ship from which the torpedoes are fired is under way, but the target is, of course, stationary. In the French navy a good deal of practice at moving targets is obtained; but, as has been before stated, the torpedo is a weapon of relatively more importance to the French than to us.

The Seagull was employed at Portsmouth as torpedo school tender; until quite recently the position was occupied by the Jaseur, a swifter vessel. The illustrations which represent the firing of a torpedo from the Seagull will give some idea of how things look. Classes are taken out most days on these trips. Similar practice is carried out at Devonport.

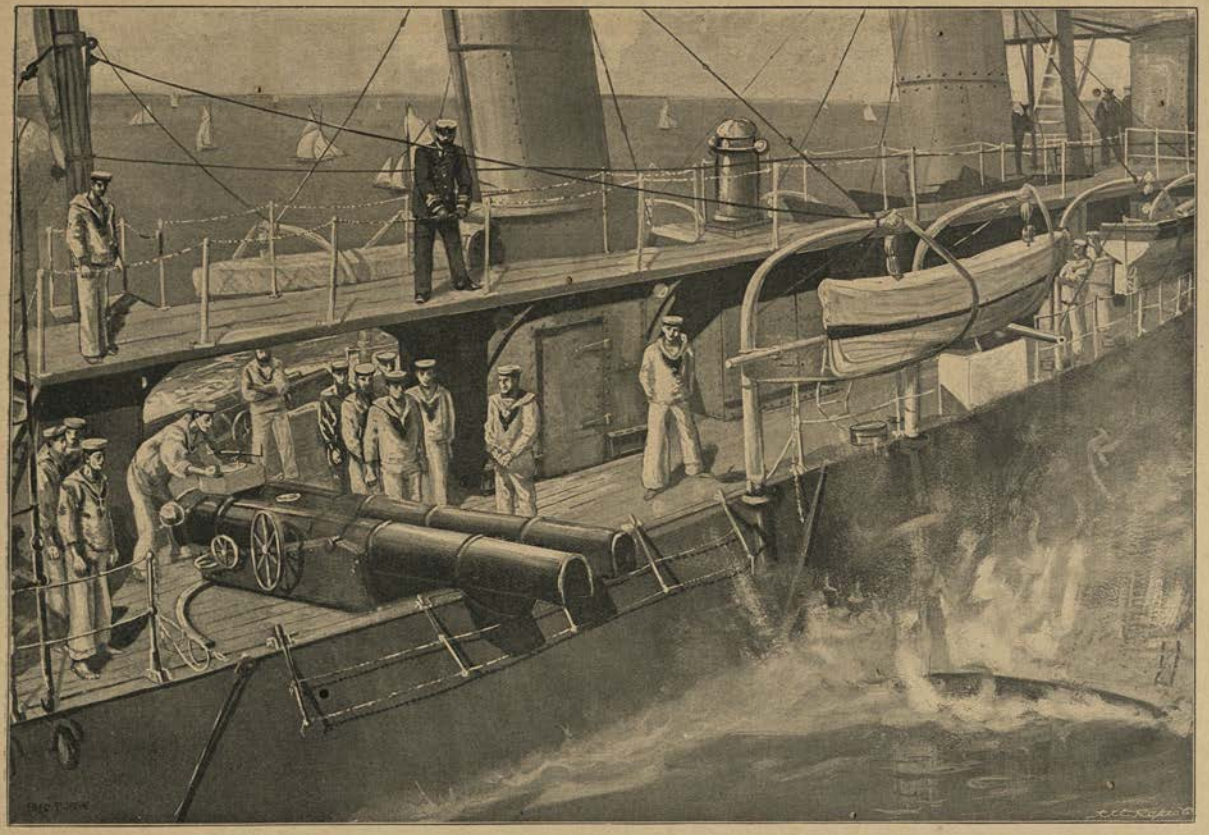
A very important service for which torpedo boats—small second-class ones very often—are utilised at our naval bases, is the instruction of second-class stokers. These unfortunates are put down below, and sent out to sea; what they undergo before their stomachs acquire "harmony with their environment" may possibly be imagined—I doubt if it can be described. The up-to-date journalist seeking for a new sensation might do worse than sign on as a stoker.

The necessity of this training is too apparent to need mention: everything in torpedo craft depends upon speed, and speed depends upon the people below. They must be fully trained and seasoned, and in war-time there will perhaps be a greater call on their courage than on anyone else's. All warfare at sea calls for greater courage than any land-fighting. Japanese



"STOKERS' BOATS"

officers who were in the Yalu battle have graphically described how the bursting shell set men on fire, and they ran about blazing. I will not add further details. But above water there is space, there are unhurt men to help. Below there is but a small space, there is no way of escape. In a torpedo boat, should one shot out of the thousands fired come into the boilers, the stokers and engineers will be boiled to death. It is a very present, probable risk. It is one they *know* they will have to face; even in peace-time it is present enough, as was abundantly proved when the Thrasher ran aground. The destroyer just touched the rocks, but a horrible boiler explosion was the immediate result.



FIRING A TORPEDO FROM H.M.S. SEAGULL

CHAPTER XI

SUBMARINE TORPEDO BOATS

THE United States, France, Spain, Germany, even Turkey, have submarine boats. England has none on its lists: to the English navy the submarine boat, at any rate in its present stage, can be of little use.'

To all intents and purposes the present stage is purely experimental, and mostly unsatisfactory. Too much reliance cannot be placed upon such reports as are published; all are under the suspicion of being more or less "edited"—perhaps favourably, perhaps otherwise. Finally, though the boat may do well in peace, in war means of neutralising it are sure to rapidly crop up.

As examples, one may mention torpedo nets hung across a channel under water. These would entrap the boat, and leave it to perish miserably. This is on the assumption that the submarine boat would be used to enter a blockaded harbour; the Americans might have used their boat, the Holland, for such a purpose against the Spanish fleet at Santiago de Cuba.

Again, from a ship's masthead a boat is visible in the daytime, even though submerged, and there is always, or nearly always, some surface indication of its presence. It is always apt to be at the mercy of a destroyer towing mines to be exploded above it, or grapnels may be towed across its path with a fair prospect of fouling its screw in some way.

However, submarine boats exist, and sooner or later will be some sort of factor in war. The following pages, descriptive of a cruise in a submarine boat, need not be taken as gospel: but there is a basis of fact to the account. More I do not feel at liberty to say. The Xn embodies the fullest actual progress in submarine navigation. Many boats are smaller, many nearly as large; none, as yet, aim at doing more.

It was in the dusk of an autumn twilight that I made my way to the secluded corner of the dockyard where the Xn lay all unbeknown to the majority of people. In the dim light it was hard to make out her form, but in general appearance she looked much like an ordinary torpedo boat as she lay awash in the Camber; indeed, between the "common or garden" torpedo boat and her submarine exotic there is much less difference than folk are apt to believe. On getting on board, which I did by passing through a small scuttle connected with the ward-room, the torpedo-boat appearance was stronger than ever; it might well have been the cabin of a small torpedo boat.

I was naturally agog with curiosity, and spent the best part

of the evening in questioning the skipper, who was, of course, enthusiastic as to his craft; yet his enthusiasm was of a sort that I doubt if he would have possessed had he not chanced to be in command of her.

Both he and the sub-lieutenant under him were passing sore at the jests levied at them by brother-officers about their unsportsmanlike method of warfare, and were at great pains to explain to me that whereas on board a ship, if the worst came to the worst, everyone would have a chance of swimming for it, with them disaster meant annihilation.

They might not show me all over the ship, but I was allowed to get enough general view of her during my stay on board to conclude that she is much like a porpoise in shape, some 100 to 150 feet in length, and armed with a couple of Maxims for surface fighting, carried in towers on the turtle-back, two torpedo tubes, and two ports for towing torpedoes. Such further details as I was permitted to note the existence of appear in the course of the narrative or in the illustrations.

I asked the captain about his *rôle* in war-time.

"Our great difficulty," said he in reply, "is the crass ignorance of everybody as to what we can and cannot do. From Jules Verne's *Twenty Thousand Leagues under the Sea* down to the penny dreadfuls, writers have spun such terrific yarns about mythical submarine craft, that the real thing seems a very poor substitute; so that, though this boat may be considered an absolute success so far as she goes, yet 'the powers that be' look on her as a failure because she cannot achieve the impossible. The fact is, our chief use is as a menace. However, you'll be able to see for yourself before long. Till then, I advise you to get as much sleep and fresh air as possible; once we're afloat you'll get little of either."

I took his advice and turned in, but lay awake for hours watching the twinkling stars through the open scuttle above me, with now and then a qualm of doubt as to whether I should ever see them again. Gradually the hum of machinery lulled me to sleep, and I knew no more till the skipper woke me to say that we were under way.

The scuttle was still open, but its raised edges were now lapped by the phosphorescent waves of the harbour as we made our course seaward at a four-knot speed.

At the harbour mouth we slowed down, and the scuttle was closed from inside, a sliding panel passing underneath it as well. Watertight doors are everything in a submarine craft.

"You had better come with me into the conning-tower," said the skipper; and thither I went, squeezing along a sort of passage, or rather tube, that led from the ward-room to the fighting position forward.

Once in the conning-tower it was more comfortable. I noted the thickly-padded walls, the wheels and buttons connected with the machinery being sunk deeply into it. This padding, the skipper informed me, was necessary to deaden the shock of torpedoes exploded near at hand.

"Indeed," said he, "we have to be most careful not to blow up ourselves; a torpedo exploding, even at three hundred yards off, makes us all turn somersaults! Now," he went on, after a pause to consult chart and compass, "we are going under."

As he spoke, he pulled a lever sharply, and we seemed to shoot up into the air—so deceptive is submarine motion. A register above me presently showed that we were at a depth of twenty feet, going forward at a speed of six knots.

Before us was a sort of porthole with a thick double sheet

A VIEW AFT THROUGH THE SCUTTLE OF THE FORWARD CONNING TOWER

of fairly clear glass in it, outside of which was a thick grating, while inside and outside of this again were watertight shutters, ready for immediate use; so our defence in that direction was pretty substantial.

I looked through the port, but at first could make out nothing at all. Gradually, however, and possibly owing to the growing daylight above, I made out dim forms of fish, vague and distorted, shooting across our path. More doors were now slid backwards, and soon from the conning-tower we had a good all-round view; the one behind me giving a sort of Japanese picture of her hull.

"Sail on the port bow, sir," sang out the lookout man, and we stopped at once.

"How on earth do you know that?" I asked the skipper.

For answer he drew me towards the sailor. In front of him was a small disc in deep shadow, and on this was mirrored a sunlit sea, with a tiny speck moving across it.

"This," said he, "is our old friend the camera obscura. You know, I suppose, how it is utilised for submarine mines on shore; you have them marked on the table, and when a ship's picture crosses the mine, you touch a button and blow her up. This is a variation of the same system. These circles indicate so many hundred yards; we can judge her distance to a foot with practice."

"But," said I, "that doesn't explain how you get the view of her."

EXCHANGING SIGNALS WITH THE CRUISER

"No," he answered. "But you noticed our mast when you came on board?"

I certainly had done so, but it had only struck me as a survival of old naval institutions.

"Well," he continued, "this mast is telescopic, and from a normal height of twenty feet above the hull, can be increased to one of fifty feet, if necessary, when we are under water. It is hollow, of course, and on top is the aperture for the camera, and by a simple arrangement we get the picture; while by revolving it the signalman can command the whole horizon. In addition to this, a bell gives us notice that a vessel is moving within three miles of us. That is a fairly well-known invention, brought out a year or two back, for giving warning of the approach of torpedo boats, and acts through the vibrations they impart to the water. It hasn't been generally adopted by any navy as yet; however, this cruiser, which we have to try and approach unobserved, has one fitted, and doubtless is looking for us now. We have to hang about and note how long it takes her to spot our mast."

We watched the cruiser going across the plate, now this way, now that, while we circled round her. Presently a puff of smoke rose from her pictured side. We were discovered!

"Seventeen minutes," said the skipper; "but they'll do it in that pretty well number of seconds with practice. I've no faith in our camera-obscura mast; it's plain as a pikestaff if they put lookout men at portholes near the water-line. Now, then, we go up."

Immediately afterwards we began to feel motion, and a very unpleasant motion it was too; and the air inside, which was none of the best, helped to increase the inconvenience. In a few minutes we jumped out of the water, fell back with a

tremendous thud, then rose again. It was a horrible experience while it lasted.

"There's a bit of a sea on," said the skipper; "but this is a mere bagatelle when you're used to it. You should feel it in half a gale!" But I had no such wish. Indeed, I soon longed for the Xn to sink for good and all and end my misery.

Our flagstaff mast was now run in, and we made slightly better weather, but it was still too much like being afloat in a bottle to suit my fancy. We also ran a semaphore up through a trap-door forward, exchanging signals with the cruiser, that now came up quite close to us.

This over, the semaphore was pulled in, and down we went again.

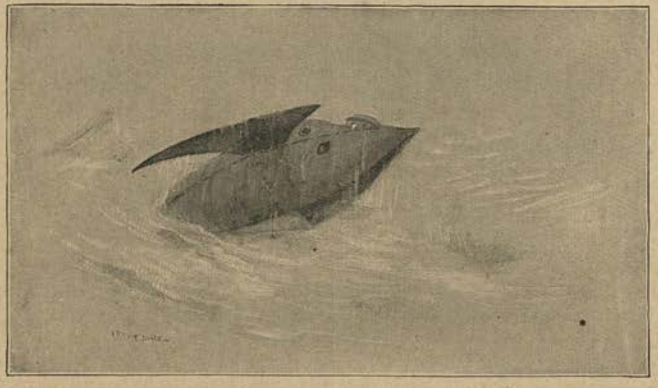
For a good two hours we cruised about, the alarm-bell ringing every few minutes and then stopping. "It's no good," growled the skipper, disgusted; "they can steam two knots to our one, and directly they hear us they steam away in circles till their bell no longer rings."

Up we went again, and more signalling took place.

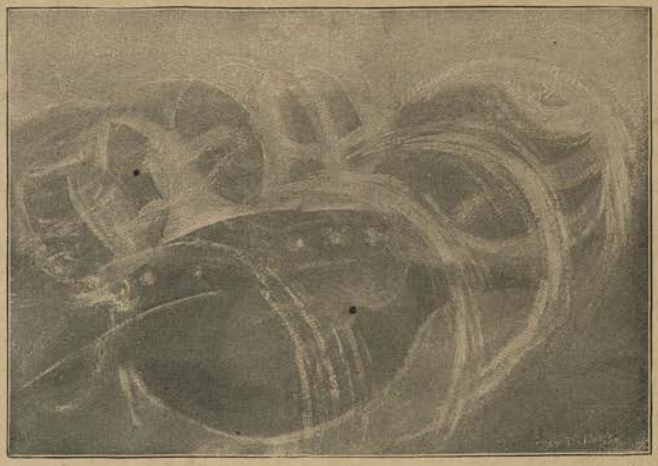
"She's not to go at over five knots now," explained our captain, "and as we can make ten at a pinch, we've a chance."

The cruiser steamed away till she was hidden from us by the waves; then, descending, we made after her as near as we could go by the compass. The bell soon rang, and by and by we rose, and made out the cruiser some six cables distant. She did not sight us this time, nor did we stay long to give her the chance — all we required was to take her bearing by the compass.

"Full speed ahead!" called the skipper through a tube. And then, taking another, "Set free the after torpedo." This —a dummy one, of course—was a sort of modernised Harvey torpedo which we intended towing against the cruiser.



COMING ABOVE WATER



IN THE WAKE OF THE CRUISER

Nothing happened, however, and we rose again. There was the cruiser steaming along, apparently on the same course, some four cables ahead of us on the starboard quarter. This time she banged at us as we went down.

"Would that have done any harm?" I asked.

"Well, it depends," was the answer. "Did she carry a dynamite gun, a shell from that exploding within a hundred feet of us would do for us for good and all. With Q.F. guns we'd have plenty of chance; yet I don't thirst to face any of it in real war."

Two or three times more we missed and rose, each time a gun from the cruiser showing we were sighted.

"Hang the beggar!" said the skipper. "I'll try and find him under water."

We made for—as near as we could judge—the position of the cruiser, but for a long while failed to find her. Presently the water ahead of us was in violent agitation, and great swirls of foam shot across the scuttle.

"That's her at last!" cried the skipper; "we're just passing under her stern. Look to port; quick!"

I looked, and caught a glimpse above me of two great whirling screws, whence came long spiral wreaths of bubbles as they beat the water to the throb of the engines.

A moment later, and we were thrown violently against the walls of the conning-tower.

"We've bagged her this time," our captain called out as he rose to his feet; "though, between you and me, it's entirely by accident! Our compass seems useless."

Little wonder, for we afterwards heard that the cruiser had towing around her a large number of powerful electro-magnets, which exercised a most upsetting influence on our compasses. Apart from this, however, compasses are never reliable in submarine boats, there is too much metal close at hand; and in one American boat an attempt is being made to do without them altogether.

We now rose alongside the cruiser, and claimed her. Thankful we were, too, for the air inside was getting very foul. Nominally, we stowed enough for twenty-four hours without renewal, compressed air was also given off by the engines (which last I was not allowed to visit), we also carried material for the manufacture of oxygen; but good as these were in *theory*, in actual practice they were far from satisfactory.

As our sub-lieutenant put it—"Three days of being at sea in the Xn would transform us all into corpses." Even this estimate seems to me excessive; twelve hours under water would be more than enough, to my thinking.

Our mast was now run up again, and some ventilating tubes as well, and thus equipped, and so in comparative comfort, we returned towards harbour.

On our way thither, however, occurred what was perhaps the most extraordinary incident of the whole cruise. We could not have been more than a couple of miles from the harbour mouth, and were steaming gently along at some twenty feet under water, when our signal-bell began to ring violently. This was curious, in that no moving vessel was visible in the camera field; but while we were yet wondering about it, our sub-lieutenant called out to look on the starboard bow. There, not a hundred feet away, was a huge indistinct form moving with us, a form so like our own that it might have been our own shadow.

"Another boat, by all that's sacred!" cried the skipper, as he gave instant order for all the tubes to be drawn in. We had to rise to do this, and as we reached the surface we caught a glimpse of the mysterious stranger coming beneath us.

It was an exciting moment! Our strange companion might seize the opportunity to destroy us, as we, unable to watch him, floated helpless above. It seemed hours while the tubes were being run in, although as a matter of fact the thing was done in an inordinately short space of time. Before everything was made taut we were plumped under water and towards the stranger, which we soon sighted.

As we approached he retreated, and for some ten minutes this strange encounter continued. We were without weapons to attack save our ram, whereas our possible enemy might have torpedoes for all we knew. "We'd better try and ram him," said the skipper, and with this object in view we strained our hardest after the stranger, who, apparently divining our object, put on speed and disappeared, and we saw him no more.

"Perhaps it's another of our own submarine craft that the Admiralty are keeping up their sleeve, sir," said our sub-lieutenant to the skipper.

"I'd lay a hundred to one, 'tisn't," he replied; "and I am perfectly certain in my own mind that if the stranger wasn't a whale, it was a boat of some other nation watching our experiments, and possibly waiting a chance to torpedo us on the quiet. Anyway, nothing will induce me to go to sea again in this craft without some live torpedoes on board; then, if he follows us, I'll sink him without warning!"

"Poor whale!" said I, laughing now that the danger was over.

"Whales don't generally swim about off ——," was the

answer; "moreover, we went on the same sort of job ourselves not so very long ago, to make notes of the colour and shape of the bottoms of some ships of a foreign Power."

So saying, he gave orders for us to resume the homeward voyage, and soon we were once more steaming up the harbour to our billet, which we found by means of our camera-obscura mast. As soon as it was quite dark we rose to the surface, and I made speedy tracks for shore.

So much for submarine torpedo boats. For breaking a blockade the menace of such a boat would be invaluable, and I hear that in some manœuvres in this direction she answered admirably; but for any other form of fighting little reliance can yet be placed in her. The difficulties of seeing under water, and the vagaries of the compass, have so far proved too serious, though I doubt not the day will come when these will be surmounted; and then, given a swift enough boat, we shall hear something. That they will ever do anything with the ram is a very open question. It is only too probable that, attempting it, they would suffer the fate of a semi-submarine boat which made such an attempt in the American Civil War—go into the hole they make, and—*stay there.* Even if this were avoided, it would be impossible to ram without some internal injury to the boat, and a leaky submarine boat is, as our skipper put it, "a Pullman car ticket to the next world."

But by whatever means she attacks, when the Xn goes into action I had rather be somewhere else.

CHAPTER XII

AERIAL TORPEDOES

PROPERLY speaking, "aerial torpedoes" belong rather to gunnery than to torpedo men; but, owing to their name, they demand some sort of note about them. It is not impossible that—at any rate in their present stage—they might not all be summed up as useless; however, since they exist either actually or experimentally on a more or less minor scale, they should be mentioned.

First and foremost comes the pneumatic gun, which, if experience had not taught us to be very wary of war items as reported nowadays, would seem to be a most potent weapon. The Americans seem to be the only nation who put faith in the dynamite gun: we, after experiment, discarded it. The objections to it are that—

(1) Its range is very limited, far less than that of a big gun, which can equally well fire high explosives in quite large enough charges to do all the destruction required.

(2) Its accuracy is very poor, hits being almost a matter of luck and chance.

Consequently we are without any big air-guns popping shells of 200 lbs. of dynamite *somewhere* in the enemy's direction. The Americans built a cruiser, the Vesuvius, specially to take three of these guns; but she was generally regarded as a failure, and before the war her guns were ordered to be removed. They appear, however, to have been in use against Santiago at the time of writing, so that judgment is better suspended for a while.

A number of these "dynamite guns" are mounted for the defence of New York harbour.

There are a variety of other inventions on more or less the same lines: first place being easily taken by the "Rocket Torpedo," a description of which, from an American paper, is as follows:—

"It has been argued that accuracy and range would be attained only when the rocket could be given the same rotary motion that a powder gun imparts to a steel projectile. To produce this in an ordinary gun requires a pressure of 15 or 20 tons per square inch—a force so great that it would detonate any mass of high explosive at the instant of discharge. An inventor has therefore conceived the novel idea of revolving both the gun and its charge. The projectile, consisting, in the 10-inch calibre, of 100 lbs. of gun-cotton, is encased in a thin metal envelope, the rear end of which contains rocket

composition, and the head a percussion fuse which is set in action by the force of impact. This projectile is placed in the gun, and when, by a mechanical contrivance, it has been spun up to *2500 revolutions per minute*, a friction cap ignites the rocket composition, and the banked-up pressure at the base starts the rocket.

"The shell then begins its flight with a rotary motion corresponding to that of the gun. The fact that this motion is due to neither the resistance of the atmosphere against vanes nor to the escape of a part of the propelling gas from a number of vents, gives it great range, velocity, and, above all, perfect accuracy—while the absence of any initial shock of discharge renders it absolutely safe.

"The heaviest war rocket fired from the new Howell gun will weigh 300 lbs., the range will be about 3000 yards, and its accuracy almost equal to that of a rifle projectile. The piece, though it cannot be called a high-angle-fire gun, nor one of point-blank range, is between the mortar and the rifle.

"The enemy is supposed to have been one of a large fleet that has engaged the Sandy Hook batteries, and, either through the smoke and confusion of battle or some other chance of war, has succeeded in passing the fort, clearing the channel of torpedoes by countermining, and is speeding for the Narrows, from which point he expects to make of New York a mass of smoking ruins. He has not reckoned well, however; for, owing to great draught of water, the battleship is compelled to follow the tortuous main ship channel, which brings her within range of the new weapons of destruction mounted on the point of Coney Island."

There is then, presumably, a cessation of fire and all other necessary "business," as the actors say, since the prophecy runs on—

"A report *little louder than that of a toy pistol, however, at last attracts his attention*—and before he has time to reply with even one of his rapid-fire guns, a number of steel cylinders are hissing and spluttering through the smoky atmosphere. With accelerated velocity they rise as high as the foremast-head, then turn their noses downward, and, with unerring aim, one of them crashes into his starboard side forward, tearing away the armour-plates, and leaving a hole through which rush the waters of the bay. Another falls a little astern, too far away to do its work of destruction, though the concussion shakes the ponderous fighting-machine from stem to stern, disables her steering-gear, and puts her engines out of line.

"The guns from the forts at the Narrows now open fire at long range, and, after a few well-directed shots, a white flag is floating at the masthead—and New York is saved!

"Or suppose a flagship is forcing an entrance into a hostile harbour planted with submarine torpedoes. Knowing that the concussion produced by any high explosive will detonate all others within a circle whose radius is 50 feet, the starboard rocket-gun is brought into action. Five hundred yards ahead there is a muffled explosion, followed by a rising column of water that sparkles in the tropic sunlight. This is immediately succeeded by other and greater explosions, and the flagship knows that she may proceed in safety, followed by the other vessels of the fleet. The port gun also throws her torpedo-destroying projectile, with a like result, until the entire channel is clear and the fleet is ready to engage the batteries of the inner harbour.

"The firing of the gun is accomplished as follows:—The

EFFECTS OF AN AERIAL TORPEDO ACCORDING TO SANGUINE INVENTORS

breech-block is first opened and the projectile inserted. It is then closed and the primer attached. The gun is then *spun up*, and when revolving rapidly enough, and pointed at the target, the lanyard is pulled, the primer fired, and the flame communicated to the rocket composition in the end of the projectile. A certain amount of the gas is allowed to escape around the rocket, so that no more pressure will be banked up than is sufficient to give the projectile a good start. After leaving the muzzle, the burning of the rocket composition increases the density of the gas, thus imparting an accelerating velocity."

Despite a certain innocence in matters naval, this detailed description is worthy of Jules Verne at his best! Most of us would, however, prefer to see this wonderful gun before believing in it.

At the same time, the account is useful in showing what is dreamed of for future naval warfare. Theory, however, is not practice, and these wonderful ship-annihilators do not seem to have spoilt the business of manufacture of big guns, either in America or elsewhere. Those who read the account of the new explosive with the Spanish reserve squadron may possibly detect some sort of similarity in the accounts.

The illustration preceding this page depicts what the inventors dream of doing; but the day when it will be accomplished is probably yet far distant, if ever it dawns at all.

There is yet another form of aerial torpedo that has hardly received the attention that it deserves. This device appeared to be a small flying machine loaded with a number of bombs, that the machine dropped at regular intervals upon each town that it passed over!

Truly it was a good thing for the late Baron Munchausen that he had not got to make his reputation in the latter part of the nineteenth century!

CHAPTER XIII

THE TORPEDO IN WAR

THE torpedo has played a fairly conspicuous part in naval warfare since its invention, but on the whole that part has been prosaic. Prosaic, that is, in so far as "dramatic effect" is concerned. The results have, however, been in some ways more valuable than would at first sight appear, since they have tended to force home the idea that torpedo nets, quick-fire guns, elaborate systems of search-lights, and so forth, are at the best very secondary defences. The defence is to keep at sea, moving at a good speed, when the boats either cannot find the ships, or, finding, can with difficulty attack. All other systems of defence stand to break down, nor is there much hope that a ship can survive attack from several boats at once.

Let us review such torpedo attacks as have been actually delivered. Those of the American Civil War I pass over; they have been described already times without number, and frequently given an importance that they in no way deserve. Now that the United States has a war on with Spain, the torpedo fights of the old days possibly may be suffered to drop into oblivion: they have no bearing upon modern torpedo warfare. For the same reason, the brilliant attacks delivered by Russian officers in the Turco-Russian War, or the more recent but still somewhat distant attacks by the French in their war with China, are given a mention only. These attacks were not with the weapon we now mean when speaking of a torpedo.

The first authentic use of an automobile torpedo was a Lay torpedo fired, or rather flung, from the Huascar against a Chilian ironclad in the Chili-Peruvian War. Having run half its course, this torpedo suddenly turned about, coming back direct to the ship that had fired it. A disaster was imminent, when an officer jumped overboard, and, swimming to the torpedo, diverted its course.

A few years later, South American waters were the scene of the first sinking of an ironclad by a Whitehead torpedo. The rebel ironclad, Blanco Encalada, a somewhat obsolete ship even for a South American Republic, lay in Caldera Bay without nets out; most of her small guns and a good many of the crew ashore, despite the fact that an attack was expected.

On the morning of April 23, 1891, just as the dawn began to break, the two Birkenhead torpedo gun-boats, Lynch and Condell, steamed into the bay. They were sighted at two thousand yards' range, and the ironclad's crew ordered to quarters. This they did in a leisurely fashion, or else they

THE TORPEDOING OF THE BLANCO ENCALADA

were too panic-stricken to open fire; in any case, the gun-boats were actually within range before a shot was fired. The Blanco Encalada then fired a few shots from a machine-gun, to which the attack replied with guns and torpedoes. Two or three of these last missed,—it has never been definitely ascertained how many were fired,—but in a very short while the ironclad was hit, and sank two minutes later, the gun-boats—neither of which had been hurt—firing on the crew as the ship went down. One hundred and eighty officers and men were drowned or killed. The ship sank in two minutes, the hole made by the torpedo on the starboard side aft being fifteen feet by seven.

The next torpedo action took place in April 1894, the scene being again a bay with a ship at anchor none too well prepared, though she did continually shift her anchorage. The victim was the Brazilian ironclad Aquidaban, flagship of the rebel Admiral de Mello, the assailant again a torpedo gun-boat—the Gustavo Sampaio. She had with her two torpedo boats that did nothing: their torpedoes missed. Practically the details of the attack are little more than a replica of the attack upon the Blanco Encalada: the assailants were quite unhurt, although the Sampaio was for some seconds practically alongside the ironclad.

The torpedo took effect on the bow; so that the ship sank but slowly, and the loss of life, save for an officer flung overboard by the shock of the explosion, was nothing. Afterwards the vessel was raised; and she is still in use in the Brazilian navy, being in England[1] for new guns at the present moment.

The attack by Japanese torpedo boats upon the Chinese fleet at Wei-hai-wei took place too recently not to be well remembered. The most noteworthy feature of the attack is that it was carried through in most bitterly severe weather, several men being frozen to death at their posts. A curious and interesting fact is, that just before one of the attacks an English naval officer came to the Japanese admiral and requested permission to accompany the attack. This was refused, but the admiral told him that if he could induce any lieutenant to take him, nothing would be said. He was taken; but, unfortunately for him, that particular night the boats were discovered, so the attempt to acquire war-training at first hand was abortive.

Altogether, the Japanese delivered or attempted four attacks on different nights.

The first attack was foiled by the Japanese on shore taking the boats to be Chinese, and firing upon them.

The second was a failure, as the Chinese discovered the boats at once.

This was replied to next day by an attack on the Japanese fleet by Chinese boats, or else the Celestials were merely trying to escape. In any case, the Japanese sank or captured a dozen boats without any trouble.

The third attack was on 4th February, when ten boats went into the harbour. Only one came back uninjured, one was sunk, two ran ashore, the rest sustained damage of minor sort. The Chinese ironclad Ting Yuen was twice struck, but did not at once sink. She was a much bigger ship than the Blanco Encalada, and torpedoes seem to have been relatively less disastrous to her. She steamed on to the mud, and gradually settled down, and presumably her wreck is still there. Some junks were also hit and sunk. So far as can be gathered, no one really knows what happened in this attack: an accurate or even approximately accurate account of a torpedo action never

[1] At Elswick. She was patched up in Brazil, and sent over to Stettin to be refitted, whence she came to Elswick.

has and never will be written. It is too quick, too confusing, too dark. There seems little doubt, however, that junks got taken for warships, just as in naval manœuvres catchers get fired at under the impression that they are battleships. A hasty momentary glimpse upon a dark night cannot reveal what the enemy is: *that* has to be left to chance and luck.

The next night another attack was delivered by six boats, and the ironclad Lai Yuen, the cruiser Ching Yuen, and a transport hit. The Ching Yuen, a modern vessel, was little hurt, since she steamed about the harbour the next day till a big shell sank her. The Lai Yuen went down—capsized. She is the ship bottom up in the illustration, which is made from a sketch by a naval officer who visited Wei-hai-wei just after its capture.

In the Chino-Japanese War there were two other torpedo attacks deserving of notice. At the battle of the Yalu a Chinese torpedo boat steamed out and attacked the Saikiomaru, firing three torpedoes, all of which missed at close range. The boat was not touched by the Japanese fire. The other is an earlier attempt, and forms the subject of the next chapter.

JAPANESE TORPEDO BOATS ENTERING WEI-HAI-WEI HARBOUR

CHAPTER XIV

TORPEDO GUN-BOATS IN ACTION

A LITTLE before the outbreak of the Chino-Japanese War, amongst the Chinese ships lying at Asan were the cruisers Tche-Yuen, Kwang-Yih, and a despatch vessel, the senior officer being Captain Fong of the Tche-Yuen, the leader of the Foochow party, who were particularly opposed to Ting and the European officers. In command of the Kwang-Yih was Captain Ling, who had distinguished himself against the French in the affair of the Min River, and on whose evidence, given before the Court of Inquiry held at Wei-hai-wei, this account is mostly based.[1] This officer, who held the rank of commander, was native instructor in the torpedo school, and a singularly able Chinaman.

There had been rumours of war before the ships left Port Arthur, but in the words of Ling—

"We went out with the Tche-Yuen, and came to Chefoo, where were many ships. Admiral Ting said, "There will be no war; there will be no war!"

And this must have been the general opinion, for, when they left Asan harbour on 25th July, the ships were not cleared for action, and the Tche-Yuen actually had her awnings up throughout the subsequent engagement.

The story of the engagement is best told in the Chinese captain's own words. Mostly native Chinese accounts are worthless, their official ones generally none too reliable, but this one is borne out by Japanese admissions, and from internal evidence far more probable than the other two versions of the affair extant. These will be touched on later.

This is the Kwang-Yih's version, translated so as to give the original sense as near as possible. It refers to what happened after they left Asan.

"We steamed at ten knots, the Tche-Yuen leading. He signalled to me, 'How fast can you go?' and I replied, 'Twelve knots is the most.' Then he made, 'Go twelve knots'; and then—'Go as fast as you can,' and we steamed at twelve knots.

"We met three big Japanese ships, the middle one bigger than the rest.[2] They hoisted a red flag and fired a gun—blank

[1] The translation was supplied by an officer who sat on the Court of Inquiry.

[2] Naniwa, Matsushima, Yoshino (*Chinese account*). The central ship was really the Akitsusu.

from the sound: then they fired shell. The Tche-Yuen went straight on at full speed—quite straight. I ordered our guns to be loaded; the torpedoes were already in the torpedo guns. I altered course, and tried to steer between the biggest ship and Yoshino, to torpedo the latter, where they could not fire at me without damaging each other, keeping towards them bow on, as was best so as to offer the smallest target, as has been taught.

"Their big shell whizzed over and around my ship, making a noise—so." (Here he gave a vocal imitation of a sound of shell—there had been some question raised as to whether or no the Japanese were still firing blank.) A shell hit my after torpedo gun, and smashed the torpedo, killing eight men, but not exploding the torpedo. I opened fire, and fired in all one hundred and eight shots at them, doing some damage. I had some misfires.

"As we came near the big ship my port-bow gun was trained on her, when the number one got the rattles, shaking so that he could not see the gun.

"'Fire! fire! Why do you not fire?' cried everybody.

"But he could not; and the gunner fired it.

"We fired many shot; but cruiser No. 3 (Yoshino) defeated my manœuvre, being swifter than I, and altered course and steamed after the Tche-Yuen, which had kept straight on, steaming very fast.

"The biggest ship steamed away from me, but I fired at her solid shot and shell. Her aim was not good always, but many shot hit us. My port-bow gun was disabled, eight men killed; one was blown away, his hands only left grasping the elevating wheel. A shot killed my quartermaster in the conning-tower; his blood, all hot, blinded me. Our ammunition was nearly done. My hammocks were on fire, all ablaze; the dead men were on fire too, their hair and clothes burning. My ship was on fire; and all pipes and hoses were cut by shell, so that we could not get the fire under. The ship had a heavy list to port, ten degrees or more; she was sinking. I could not come up with the enemy.

"The Japanese now drew off, so I took my ship in-shore to run her aground. I got in shallow water, where they could not follow me. I landed all the wounded in our one boat left, but I could not land the dead men, who were all burning. The Naniwa came up, firing many shell at my ship, till she blew up.[1] We marched to a Corean village: the wounded suffered terribly."

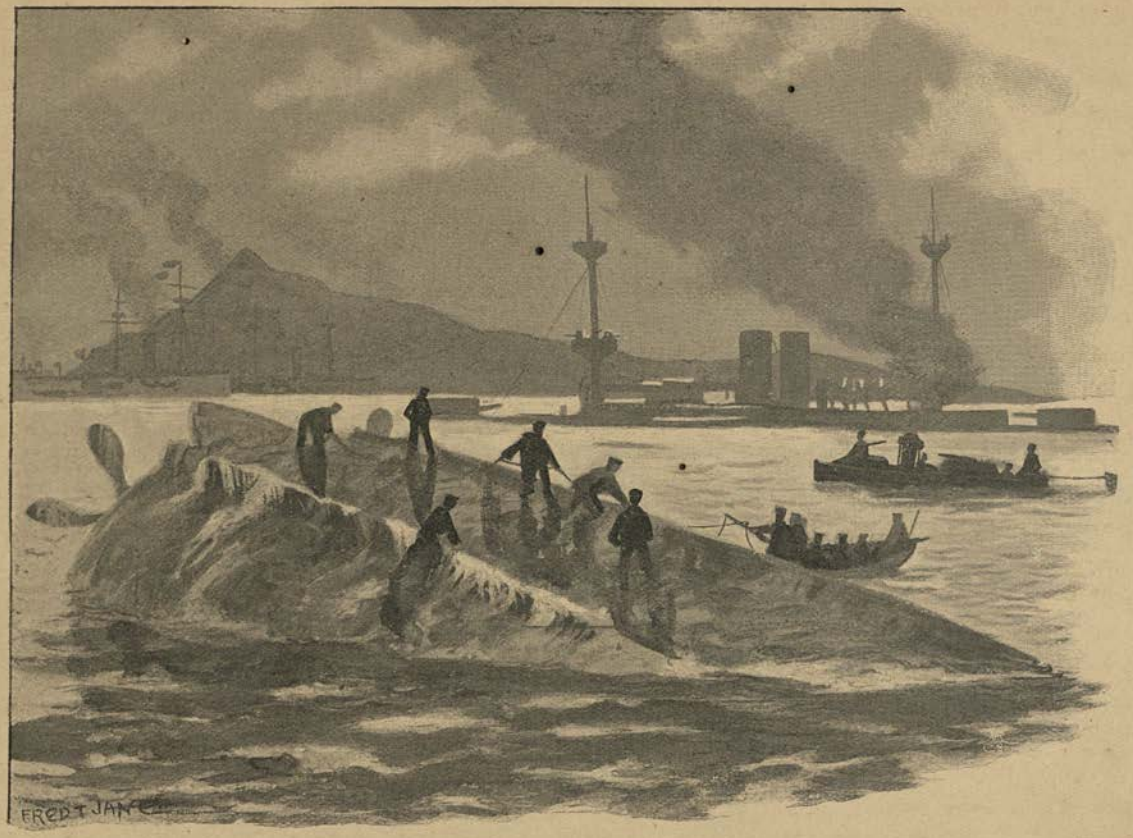
Thus the report of the captain of the Kwang-Yih. He and the seventeen other survivors were taken back to China in H.M.S. Archer, giving their words not to do any more fighting. The Chinese authorities, however, compelled them to serve again, or suffer execution, and they were present in the fleet at Wei-hai-wei in the following February, and he was killed there, either by the Japanese fire or by the general Chinese order after the surrender.

There is no doubt that this charge of the little Kwang-Yih considerably disconcerted the Japanese squadron, and to it may perhaps be attributed the escape of the Tche-Yuen,—for the Yoshino was a far swifter ship than she,—since the runaway thus got a good start.

The Kwang-Yih lost thirty-seven men killed, and many of the eighteen survivors were wounded.

The Japanese version of the engagement is that the Chinese

[1] This explosion is supposed to have been caused by a live torpedo being struck. It appears from Japanese accounts that the attacking ship was really the Akitsusu.



WEI-HAI-WEI HARBOUR—AFTER ITS CAPTURE BY THE JAPANESE

failed to salute their admiral's flag in Yoshino, that they were cleared for action, that the Tche-Yuen pressed their ships, and, nearing the Naniwa, hoisted the white flag, and then fired a torpedo, which missed; whereupon they at once opened fire. They had also on show in the Naniwa a shot which they said the Tche-Yuen had fired into them. There is nothing in the Kwang-Yih account to absolutely contradict the truth of all this, but the fact that Fong had three ships against him makes it improbable that he should have so acted. It would, no doubt, have been sound Chinese tactics to have behaved in this fashion had there been but one Japanese vessel!

History, as we have seen, is full of engagements similar to this one, taking place before the declaration of war, and each side swears hard that it was not the aggressor. To arrive at the certain truth is impossible.

The Tche-Yuen version of the affair, as given by Fong, though at first acceptable to the Chinese authorities, was discredited even by them afterwards. According to Fong, the three Japanese ships opened fire unexpectedly—a blank shot first, then came the red flag and shell. Unprepared for this, he steamed away while he got ready for action; and, drawing the flagship after him, he left—so he explained—a convenient opportunity for the Kwang-Yih to destroy the other two vessels!

In the ensuing action between him and the Yoshino he could only bring his after gun to bear, but this was fought so well that the Yoshino was put out of action! Having thus accomplished his share in the battle, he went on to Wei-hai-wei. The Tche-Yuen was much shot about, her steam steering-gear destroyed, conning-tower and turrets blown about, three officers and thirteen men killed, twenty-five men wounded. Fong was the hero of the hour, till the return of the Kwang-Yih's crew; the promotion which he had received was then cancelled, and he was disgraced as a runaway. He remained in command of the Tche-Yuen, however, and he was heard of again at Yalu—the news of which was first brought to China by him. On this occasion his tactics cost him his head.

The Japanese say that the Yoshino was not hit, but that a breakdown of machinery prevented her following the Tche-Yuen any farther. It should be mentioned that the Japanese—and wisely—never allowed the truth about such damage as they may have sustained to be known; but there is reason to believe that the Yoshino sustained little or no hurt, while, on the other hand, the central ship was, perhaps, considerably knocked about by the hundred and five shot and shell that the little Kwang-Yih put into her.

The Naniwa subsequently came across the Kowshing, a transport bound for Corea, which she ordered to surrender. The Chinese soldiers refusing so to do, the Japanese cruiser discharged a torpedo that missed, then opened fire, and sank her after an hour's shooting, the Chinese soldiers replying with rifles. After the transport sank, the Japanese are said to have fired upon the Chinese in the water, killing and wounding many, attempting to save none, though they picked up her European officers. They have been much blamed—over blamed—for this matter. Regarding the question apart from sentiment, it is hard to see exactly what else they could have done. They dared not take all the Chinese on board, for they would have tried to capture the ship so long as a man was left standing; their so-called brutality is rather for having fired on men in the water than for not saving them—no European power (unless it might be the English) would have run that risk.

As for the firing on the Kowshing, a transport that had left in time of peace, and was under a neutral flag, here again a study of history prevents our blaming the Japanese too much. Many wars have been fought without any declaration at all; in most there has been bloodshed while the nations were yet nominally at peace. War is brutal, it is necessarily so; and no neutral flag will save the one side from damage by the other when a favourable chance occurs. It never has; it never will, unless there be founded an international police to enforce those "laws of nations" made in peace, and to see that all the fighting is done in accordance with the rules. But when we have reached that stage, the days of warfare will be past and over. Morally the action of the Naniwa was indefensible, ethically abominable: but belligerent nations have no morals; their sole aim is to kill each other; to crush, to destroy, without regard to the means to that end. Politically and strategically the Japanese were very wise to prevent the Kowshing landing her soldiers in Corea. A war well spent may produce instances of chivalry, of honour and respect to a brave foe, but in its genesis war is hell let loose.

After the Yalu, the Chinese fleet ceased to be a fleet to be reckoned with, and no action such as might have been attempted was tried by the remaining torpedo gun-boats. They skulked at Wei-hai-wei with the rest of the fleet, coated with ice and snow, firing desultory guns till the white flag flew. The last shot fired for China is said to have been from one of these torpedo gun-boats.

The only other action in which catchers have been engaged was not one of much moment. It happened in the Chilian revolution, just after the sinking of the Blanco Encalada. The Lynch and Condell coming out of Caldera Bay were engaged by an armed transport. Over a hundred shots were fired on either side, but the damage done was infinitesimal.

An untimely end was put to this contest by the arrival of the British cruiser Warspite. At sight of her the Lynch and Condell bolted, taking her, so they said, for the Esmeralda, a Congressional cruiser. Seeing that the Esmeralda has two masts, and the Warspite only one between the funnels, and that the two vessels are absolutely unlike each other, this statement is a rather difficult one to credit.

The part played by destroyers in the Hispano-American war does not, at any rate up to the moment of writing, do credit to the craft. The Furor, Terror, Pluton, Audaz, Osada, and Prosperine are (or in some cases were) very capable boats built at Clydebank. They might have done much, but they accomplished little. The blame cannot lie with the boats, probably not with their crews; it rests with their officers or those in command of the operations.

The Terror appears to have been wasted in an attack upon an armed liner off Porto Rico: the Furor and Pluton met their end at Santiago in the daylight. So far as can be gathered from the mass of lies that encircle most war reports, they did nothing at Santiago till the final battle. The attacks that they might have successfully made at night were never attempted; they came out in daylight, and quickly met the only fate that they could have expected—they were wasted and thrown away.

A LAST SHOT FOR CHINA—FORECASTLE OF A CATCHER AT WEI-HAI-WEI

CHAPTER XV

THE FUTURE OF TORPEDO CRAFT

"WHAT will torpedo craft do in the future?" This is the question troubling a good many people, and one that the future alone can answer. We can surmise, guess, argue from past history, but whatever we do our conclusions must remain surmises, likely to be upset by events.

In particular, an action between flotillas of destroyers will be, must be, pregnant with strange surprises. So far as the naval war game may be taken as affording a clue, victory will rest with the commander who can think most quickly. In the game, if the action be a daylight one, firing range is under favourable weather conditions 3000 yards, speed 800 yards a minute. This means that hostile boats can approach at a combined speed of 1600 yards — nearly a mile a minute. Presuming boats to both keep their courses, they come into range, pass, and get out of it again all in two minutes. This approximates pretty closely to actual conditions. One hit may disable a boat should it get her in the engines, two shells will sink her. From this one can form some faint conception as to what the actual thing will be like. Something may depend on chance, on lucky shots, but far more will rest upon happy disposition and the instant utilisation of opportunity. All or nearly all naval battles have been won by getting the whole of one force upon a portion of the other, and crushing it before the rest could help. Nelson won all his battles that way. In his time this operation might take half an hour, or an hour, or even more. In the destroyer action of the future it may take exactly one minute, or possibly even less, not more than two minutes at the outside!

However, these things may be left for the futnre to solve.

I propose now to briefly review the question of the torpedo in the light of what has been done, with a statement of the deductions usually drawn from thence.

With the torpedo vessel I shall deal farther on: here we will consider the ship's torpedo tube. The torpedo is a destructive weapon, but it cannot be used at a range much exceeding a quarter of a mile. At that distance the big gun can hardly miss, and its devastation would be quite as appalling as any that the less accurate torpedo could effect. Moreover, the slow speed of a torpedo — slow in comparison with a projectile—infinitely increases the risk of damaging a friend instead of the enemy aimed at. Also, every part of the ironclad not heavily armoured being searched by quick-fire shell,

torpedoes from above-water tubes are likely to be exploded in their tubes long ere they can be employed. So much is this recognised, that the under-water tube alone is being adopted for new designs, while the above-water tube is condemned entirely. But submerged tubes are difficult to use. In the British navy, certainly, the deflection of the torpedo caused by the ship's movement has been reduced to a very few degrees; but perfection is still some distance off. With other nations, the tube being of cruder design, the deflection is so enormous that a hit at any appreciable range must be almost a matter of pure chance. The gyroscope may alter this, but that yet remains to be proved.

Let us briefly consider what the modern torpedo, fired from large ships, has actually done.

In the Chino-Japanese War the submerged tube played no part, and the above-water tube was employed without results. Taking the battles of the war in their order, we find that at Asan, the Tche-Yuen, approaching the Japanese squadron under a flag of truce, fired a torpedo which missed. Later, when chased and fired at by the Yoshino, six loaded torpedoes lay on the Chinaman's deck; but none were hit.

In the same battle the gun-boat Kwang-kih attempted to approach within torpedo range of the enemy, but, ere she could do so, was so badly damaged by gun-fire that she had to be beached. During this cannonade, a tube with a torpedo in it was hit by a projectile, which destroyed the discharging mechanism, but did not explode the torpedo. Later, a shell from the Akitsusu hit the loaded after torpedo tube, and the torpedo, exploding, blew the gun-boat's stern to atoms.

In the affair of the Kowshing, the Japanese Naniwa is said to have fired a torpedo; but this has been denied. In any case, the explosion which preceded the sinking of the transport seems to have been due to a 10-inch shell; and there is nothing to show that any torpedo hit the target.

At the Yalu, the Chinamen, anxious possibly to be rid of them, discharged all their torpedoes at a ridiculously long range. The water was "full of torpedoes" floating about, but no ship came foul of them; and after the fight fishermen picked them up and towed them to Port Arthur, where they were repurchased by Admiral Ting at one hundred dollars a torpedo.

Therefore, so far, the ship's torpedo has nothing to show for itself; the successes obtained against the Aquidaban and Blanco Encalada being those of gun-boats *used as torpedo boats*, and in both cases in night attacks in harbour.

There is "the day after to-morrow" to consider—when the dynamite gun and submarine boat shall have been perfected. But the former is always bound to be limited in its range, and exposed to the fire of guns that can attack it long ere it can reach them in reply; and the latter, even supposing the apparently hopeless problem of how to see under water to be solved, is hampered by innumerable other difficulties. It must come to the surface to see the enemy; and it can do so only in comparatively smooth water. For its own safety, it must move at a low speed, and a swifter enemy cannot have much cause to dread it under any conditions that as yet appear possible. It is dangerous to dogmatise as to the future, but the submarine boat does not at present hold anything but a limited future value. So much secrecy is observed about these craft, that one cannot discuss their evolution freely; but they do not appear to have greatly progressed beyond the Confederate "Davids"; and these, despite the sinking of the Housatonic, were, on the whole, far from successful. For such service very brave

DESTROYERS AND TORPEDO BOATS

men are needed, and, since the supply is limited, in no navy are these to be lightly wasted. The submarine torpedo boat, which sooner or later means death to its crew, does not appear to offer any promise of results worth the sacrifice. Rather, the future of special torpedo attack seems to lie with the boat swiftly moving on the surface; and this we must now examine.

Practical torpedo warfare of to-day reached its apotheosis at Wei-hai-wei, and the results were not eminently satisfactory. The Chinese were disheartened; their ships did not carry the right sort of guns to repel torpedo boats, their defensive preparations were very poor, and the fleet was in an easily assailable position. Twice the Japanese boats were discovered, and had to retreat; twice they made attacks. In these attacks, two boats were sunk and several disabled, and only a small percentage of torpedoes hit the target. One ironclad, Lai Yuen, was struck and capsized; an old nondescript vessel, Wei Yuen, was sunk; the battleship Ting Yuen, twice struck, was compelled to run ashore; and the more modern Elswick-built cruiser Ching-Yuen was hit, but only very partially disabled. It was a result by no means equal to what had been prophesied.

Against this we must reckon the physical difficulties that the Japanese encountered from the weather—difficulties that have, perhaps, hardly received a due meed of appreciation. Some of their torpedoes could not be fired because of the ice which clogged the tubes. Yet the Chinese fire was so very wild that this disadvantage was more than counterbalanced, if the actions are viewed purely in the light of experiments as to the pros and cons of torpedo-boat attack. It is the old, old story, that the things which are perfect in theory may prove to be something entirely different under the strain of actual war.

This is a truism, as also is the response that the excitement of battle is the cause. For torpedo-boat warfare this last is somewhat inaccurate, since at least two more potent forces are at work. I have seen and participated in a good many sham torpedo attacks, and have invariably noticed that it is impossible to judge the distance of the enemy. This is a factor common

ON BOARD A TORPEDO BOAT DURING AN ATTACK
(From "Blake of the 'Rattlesnake.'")

to peace and war, and so deserves attention. The actual firing of a torpedo is a comparatively simple matter; the principal part of the business is done in harbour beforehand, and the boat is steered so that the tube bears on the target. So soon as this is in line with the sights of the director, a trigger is pressed, or a lanyard pulled, and the torpedo leaps out. But it is necessary to know the distance, and this can be only very roughly guessed. Even in a peace attack there is room and to spare for excitement; but this is usually absent: service in torpedo boats soon gives a man phlegm.

The second and more important point can occur only under actual fire. Curiously enough, saving a few torpedo officers, no one has yet considered the thing that, before all others, may cause the torpedoist to fire too soon. It is the thought, "Suppose I am killed before I get my chance?"

A torpedo tube is not a gun. A gun when laid, from the roll of the ship, may be on and off the target, but there is a far longer period of time during which it can be fired with a reasonable prospect of success than in the case of a torpedo. It can, too, be easily relaid; a dead number one can be quickly replaced. There is no relaying a torpedo tube during an attack, —no boat attacking a modern well-armed ironclad is likely to live long enough for a second attempt,—and the firer of the torpedo is probably alone on the deck. If he be killed or disabled, the chance of firing the torpedo is lost. At distances under three hundred yards a torpedo is fairly certain to hit; at five hundred yards there is very much chance in the matter. The selection of the distance might depend upon the officer in command of the boat, while the gunner, or a sub-lieutenant, attended to the tubes; but there are few skippers who would not, in actual practice, instead of being in the conning-tower, be on deck steering the boat themselves, with the intention of running to the tube and discharging the torpedo at the opportune instant. In supreme moments having such issues as a torpedo attack, a man would trust only himself.

The average torpedo man expects to get killed when he attacks: with him the question is, "Shall I be killed before I can fire, or after?" The more anxious he may be not to die without having done something, the more likely he is to fire at too great a range.

To return to the torpedo attack itself. There is reason to believe that sham torpedo-boat attacks afford a tolerably fair index to what may be expected in war. Two minutes is the usual time allowed to a torpedo boat under fire from a battle-ship before she is considered out of action. Now, though it is safe to assert that it is extremely improbable that a boat would be actually destroyed in so short a time, she may well be expected to receive hits that would materially reduce speed before being fired at for two minutes; and the longer time consequently taken to reach torpedoing distance may be taken as a set-off against wildness in a ship's fire. Other pros and cons are that, hard as it is for a boat to find a fleet in peace manœuvres, it will—as a general rule—be infinitely harder in war-time. The nerve tension consequent upon an actual attempt should also count something against the boat—but less than is generally assumed. I do not think that disciplined men under fire from a ship would lose their heads. An untrained crew certainly would; but a torpedo boat manned with the raw material would, for other reasons, be so absolutely useless that no ship would have cause to dread it.

We may therefore take it that the percentage of losses sustained by fleets in peace manœuvres represents approximately

the percentage of losses that may be looked for in war. This does not work out at a higher figure than one ship in fifteen, and is arrived at from English and French manœuvres during the last few years. Since all doubtful cases are counted in favour of the boat, this is possibly an excessive estimate rather than otherwise.

In the future, the general adoption of the 12-pounder gun with its 3-inch shell will confer a heavy advantage on the big ship; but the real point against the boat is that she is too slow. A twenty-knot boat, out at sea, is not able to steam so fast as a fifteen-knot battleship: in a sea that does not affect the latter, the former may find her speed almost halved. Nearly all the torpedo boats in existence are, from this cause, practically obsolete.

From the torpedo boat we come to its special antidote, the thirty-knot "destroyer," than which no vessel has more fired the popular imagination; nor are there wanting, even in naval circles, those who assert that she is the warship of to-morrow. Admiral Colomb, who, next to Captain Mahan, is the best-known authority upon matters of naval tactics and strategy, recently attempted to prove this in a lecture at the United Service Institution; and, on the face of it, made out a very good case for his argument. He did not, however, pay much attention to the speed question noted above. Swifter than the torpedo boat the destroyer certainly is, but an extra four knots is not sufficient to cause a complete revolution in warfare. A destroyer—assuming smooth water—travels at about one thousand yards a minute: a torpedo boat under the same conditions will cover, say, eight hundred. Two thousand five hundred to two thousand yards may be put down as the average

A TORPEDO ACTION IN THE NEXT WAR

distance at which an attacking torpedo vessel is likely to be sighted, save on a dark night: the destroyer thus gains twenty-four seconds over the boat. In choppy water the destroyer rapidly loses speed, though not quite so quickly as the boat; and her gain in such weather may be put at half a minute. This is a good deal; but it is met, and perhaps nullified, by the increased advantage given to the ship by the 12-pounder gun in place of the lighter guns previously in use. The above calculation is made on the assumption that the ship is stationary: if in motion, and the attack even from ahead, the time is not likely to be materially reduced, because the ship can turn and present her bow, thus forcing the attack to make a détour. Altogether, there is little reason to expect any alteration in the results of to-morrow from those of to-day, unless the "zone" system of fire breaks down, and it should prove even more difficult to hit a rapidly moving object than has been anticipated. Six 12-pounder guns only, firing at a torpedo craft, would discharge in two minutes at least one hundred and twenty shell,—about two hundred is what, in theory, they could fire,—and a single shell may stop the attack. It is hard to believe that all these shell could miss, especially as under the "zone" system each gun has a special space of water assigned to it.

An attack by a large number of torpedo craft does not offer a much greater chance of success. There is much risk of collision, much probability that the projectile which missed one boat will hit another. Now and then a boat is bound to get home; and the moral result of this will have effects of far more value than the merely physical; yet both to-day and to-morrow, so far as we can judge, the chances will be against the torpedo craft, save when they catch the enemy by surprise; then it will be "Torpedo triumphans."

THE END.

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